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ABSTRACT

In 1987, a study was conducted within the Iowa Valley Community College District (IVCCD) to identify the responsibilities of secretaries at the time of the study and to project what their responsibilities would be in 10 years. The supervisor and the secretary at 864 businesses in the IVCCD were surveyed to determine their perceptions of the current and future importance of a series of general and equipment-related responsibilities and academic subjects to the position of secretary. Usable responses were returned by 19.4% of the secretaries and 18% of the supervisors. Study findings included the following: (1) 46.4% of the respondents felt that secretarial positions would change significantly over the next 10 years due to technology; (2) over 60% of the respondents indicated that more responsibilities and subjects would be "very important" for secretaries in 1997 than in 1987; (3) over 50% of the respondents felt that handling telephone duties, typing with accuracy, meeting the public, organizing and using a file system, organizing and prioritizing work and handling mail tasks were "very important" responsibilities for secretaries in 1987; (4) over 50% of the respondents felt that using voice mail, using a micrographics filing system, using electronic calendaring and mail were "not applicable" job responsibilities for 1987; and (5) only one subject (medical secretarial procedures) and one responsibility (taking and transcribing shorthand) were expected to be "not applicable" job responsibilities for secretaries in 1997. The survey instrument is appended. (UCM)

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An analysis and projection of secretarial responsibilities in 1987 and 1997 in the area served by Iowa Valley Community College District according to secretaries and supervisors

by

Brenda Hoover Woodward

A Thesis Submitted to the
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CHAPTER 1. INTRODUCTION

The secretarial occupation is a large, complex, and ever-changing one. Because of this, secretarial curriculums in community colleges need to be evaluated and modified periodically. Factual information should be gathered in the areas served and it should be used as a basis for curriculum revision.

According to the United States Department of Labor (1986), secretaries represent one of the single largest occupations, holding approximately 2,797,000 jobs in 1984. Employment in the occupation is expected to grow more slowly through the mid-1990s due to automation and changes in staffing patterns, however numerous job opportunities are expected due to the large size of the occupation. Growth in the secretarial occupation between 1984 and 1995 is expected to increase by 268,000 jobs or 10 percent (Austin, 1986, p. 21). Because secretaries represent such a large percentage of the workforce, it is important to study their present and future role as a needed occupation.

What and who are secretaries? According to the United States Department of Labor (1977), secretaries are people employed in "occupations concerned with carrying out minor administrative and general office duties in addition to taking and transcribing dictation." The definition is as broad as the role of the secretary itself. Secretarial

positions are found in all kinds of businesses and in all sizes of offices. According to Murphree (1985), the secretarial job is a diverse one--the "secretary's" position tends to be a catchall category for any office worker who performs a variety of tasks that support the work of someone else, usually a manager or professional. As the nature of office work changes, so do secretarial duties. This "catchall" role of secretaries contributes to the change in secretarial work responsibilities.

In order to encompass all of the responsibilities of a secretary, the definition must be general. Although the secretary's responsibilities are general, they must be defined in order to assist educators in preparing an appropriate training program. Studies (Dennee, 1981; Hobson, 1982, Matthews, 1975; and Wagley, 1975) have been completed that determine the broad responsibilities of the secretary. However, as technological advancements are integrated into the office, secretarial responsibilities may change. Repetitive tasks that once consumed a large portion of the secretary's time have become automated, allowing more time for the secretary to assume other tasks.

As the role of the secretary changes, the need to revise and update the secretarial curriculum becomes necessary. In education, curriculum content tends to be

one step behind what exists in the "real world." As technologies and responsibilities change in offices, so should the training of secretaries change in education. According to Moody and Matthews (1977):

> As progress comes to the business world, teachers must be prepared to redesign the curriculum, but it must be done from the foundation of careful assessment, accurate data and planning. The challenge lies in meeting both the needs of the traditional office and the automated office while preparing for continuous renovation of the curriculum to keep pace with the business world (p. 47).

Because of the size of the secretarial workforce, the general nature of the secretarial position, and the ever-changing responsibilities, studies must be completed that will guide educators in redesigning the secretarial curriculum. By studying present job requirements and projecting future job requirements of secretaries, instructors of office occupations can more effectively prepare students for successful careers.

In a review of selected literature, studies were found that described secretarial responsibilities during a specific time period (Dennee, 1981; Matthews, 1975; and Wagley, 1975). Also, studies were found that described secretarial responsibilities and office technology in

different geographic areas (Hobson, 1982; Larson, 1980; and Rohrer, 1978). Because these studies were descriptive of a specific time period, which has passed, and of a specific location, they may not be generalizable to the present nor to other geographic locations. In a review of selected literature, no studies were found which included the time period used in this study (1987 and 1997). Since Murphree (1985) and others provide reason to suspect that responsibilities may change over time, further and ongoing research of the duties and responsibilities of current and future secretaries is warranted. As Ellis (1981) recommended, studies of competencies of secretaries should be completed in the geographic areas which serve the graduates of the community college because the information would help faculties develop curriculums, advise students, establish majors, and improve faculties' professional knowledge. The goals of community colleges are designed to meet the needs of the public they serve. By studying the role of the secretary in the geographic areas served by Iowa Valley Community College District, the specific needs of the communities served can be met in the secretarial vocational program.

Finally, literature reviewed suggested a difference of opinion, related to secretarial responsibilities, between

secretaries and their employers (Dennee, 1981; Moscove, 1972; Roberts, 1975; Sanders, 1977; and Wagley, 1975). Johnson (1978) indicated that there was agreement among employers and employees regarding secretarial skills and competencies. After surveying only secretaries, Matthews (1975) indicated a need to determine whether a survey of employees and supervisors would yield the same data as that provided by secretaries. Through surveys of both groups of people, differences of opinion regarding secretarial responsibilities may be isolated and analyzed.

In conclusion, the complexity and size of the secretarial occupation make it important to study the role of the secretary in offices. In addition, however, new environments, equipment and procedures in offices are changing the role of the secretary; these changes occur at different rates in different geographic areas. Because of these changes, studies should be conducted for specific geographic areas in order to determine the secretary's role in the office today and in the future. Studies including opinions of both secretaries and supervisors would likely be more reliable. The secretarial curriculum can then be modified accordingly to reflect current secretarial responsibilities in offices, and plans can be made for further curriculum revision in the future.

Statement of the Problem

The problem of the study was that as changes, technological and otherwise, occur in offices, the secretary's responsibilities are modified. As a result, the secretarial curriculum, may become inappropriate for adequate job entry preparation. Adding to the problem is the fact that different geographic areas are at various stages in the implementation of these new technologies and procedures. The duties of secretaries in a particular area are also, in part, shaped by the mix of types of businesses in that area.

Educators need to know how the secretary's responsibilities are changing. They also need information about actual and projected secretarial responsibilities in offices in various geographic areas. Secretarial curriculums may then be modified accordingly.

Purpose of the Study

The purpose of the study was to identify the responsibilities of secretaries at the time of the study (1987) and in ten years (1997) in the approximate four-county area in central Iowa served by Iowa Valley Community College District. The information was based on the perceptions of secretaries and their supervisors and was intended for use by educators in making decisions about

secretarial curriculum content at the time of the study and in the future. For the purpose of the study, the definition of a secretary provided by the U.S. Department of Labor (1977) was used with a minor change. A secretary was defined as a person employed to carry out minor administrative and general office duties, including document preparation.

Objectives and Hypotheses of the Study

The objectives and hypotheses of the study were:

1. To identify the responsibilities of the secretary in 1987 and 1997 in businesses in the area served by Iowa Valley Community College District.

2. To identify the differences of opinion between secretaries and supervisors with regard to responsibilities of secretaries in 1987 and 1997.

Hypothesis 1: There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1987 between secretaries and supervisors.

Hypothesis 2: There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1997 between secretaries and supervisors.

3. To determine how the role of the secretary will change from 1987 to 1997.

Hypothesis 3: There is no significant difference in the role of the secretary in 1987 and the projected role of the secretary in 1997.

Methods and Procedures

The procedures for this study were divided into five steps. These included: 1) construction of the survey instrument; 2) validation and approval of the survey instrument; 3) compilation of the mailing list; 4) mailing of the survey instrument; and, 5) treatment of the data.

The survey instrument was constructed from a review of selected literature on secretarial responsibilities, the future office, and integrated data collection methods. Through this review, common secretarial responsibilities of the past, as well as trends for the future, were identified and used in the construction of the survey.

After the survey was prepared, validation of the instrument was sought from two groups of people--community college business education instructors in the state of Iowa and secretarial students at Marshalltown Community College. Members of the Human Subjects in Research Committee at Iowa State University approved the survey on June 8, 1987. The first two groups evaluated the content of the survey

instrument. The Human Subjects Committee evaluated the intent of the instrument and the possibility of harm to the subjects.

After the survey instrument was validated and approved, the mailing list was compiled. The population for the study consisted of businesses in the area served by Iowa Valley Community College District. Telephone directories from the six major cities in District VI were used to identify the population. A 10 percent random sample was taken from the yellow pages in the directories. A total of 864 businesses was included in the 10 percent sample.

Both secretaries and their supervisors in the sample of businesses were asked to complete surveys. A letter was sent to the supervisor of the business. Enclosed in the envelope with the letter to the supervisor were two surveys, one for the supervisor and one for the secretary, and a letter of explanation to the secretary. After two weeks, follow-up letters and additional surveys were sent to those who had not returned the original surveys.

Upon return of the surveys, the data was compiled, coded, and analyzed through the use of a computer. Common responsibilities of the secretary in 1987 and 1997 in District VI were identified through frequency distributions. Differences of opinion between secretaries

and supervisors regarding responsibilities in 1987 and 1997 were determined by the use of the Student's t test. Also, the role change of secretaries from 1987 to 1997 was projected by the use of the Student's t test.

Assumptions of the Study

It was assumed in the study that:

1. Secretaries and supervisors in businesses were able to determine and project responsibilities of the secretary in 1987 and 1997.

2. The checklist used in the study was appropriate for collecting the data needed for the study.

3. The sample used in this study was representative of supervisors and secretaries in the geographic area served by Iowa Valley Community College District.

4. The results of the surveys were not adversely affected by time or circumstances extraneous to the study. These assumptions were not considered detrimental to the results of the study.

Delimitations of the Study

This study was delimited as follows.

1. Conclusions were based on an analysis of data obtained from the survey.

2. Conclusions were specific to the sample population of supervisors and secretaries who participated in the study.

3. The study of the future was limited by the actual knowledge of secretaries and supervisors at the time of the study.

The delimitations of this research were not considered damaging to the outcome of the study.

Definition of Terms

For the purpose of this study, the following terms are defined:

Iowa Valley Community College District (IVCCD or District VI): geographical area used in the study; area served by Marshalltown Community College and Ellsworth Community College in Iowa

Secretarial responsibilities: skills or knowledge of subjects for which the secretary is held accountable

Secretary: a person employed to carry out administrative and general office duties, including document preparation (U.S. Department of Labor, 1977)

Supervisor: a person who supervises one or more secretaries

Significance of the Study

This study is significant because:

1. Secretaries represent a major portion of the workforce for whom postsecondary education is provided.

2. Information is provided regarding the responsibilities of the secretary in 1987 and 1997 in the area served by Iowa Valley Community College District.

3. Both secretaries and supervisors were surveyed.

4. A model is provided for continued research of this kind.

The first reason the study is significant is because secretaries represent a major portion of the workforce for whom postsecondary education is provided. According to the United States Department of Labor (Occupational Outlook Handbook, 1986, p. 282) secretaries are one of the largest and fastest-growing occupations in the U.S. economy. Employment in clerical occupations is projected to increase with 2 million new jobs between 1984 and 1995, making it the largest occupation with 20.5 million workers in 1995 (Silvestri & Lukasiewicz, 1985, p. 5). According to Austin (1986, p. 21), the secretarial occupation will grow by 10 percent from 1984 to 1995. Job openings for secretaries are expected to be three times the number of openings for any other clerical occupation. These statistics indicate the need for trained workers in these

occupations. However, appropriate training can only be provided after an analysis of actual and projected secretarial responsibilities.

The second reason the study is significant is because information is provided regarding the responsibilities of the secretary in 1987 and 1997 in the area served by Iowa Valley Community College District. Community colleges were organized to serve the population which they represent. As stated in the Marshalltown Community College catalog (1985-1987, p. 6), the "comprehensive, community-centered college" was established to provide for the diverse educational needs of the people of the Iowa Valley District. For a community college to fulfill its obligation to its students and the community served by its graduates, information must be gathered from the businesses in the communities served to assist educators in modifying curriculum content. Present and futuristic views should be gathered. The results of this study may be used to partially achieve the goal of the community college. Business educators may use the results as a guide in modifying the secretarial science curriculums from 1987 through 1997.

This study is also significant because it includes opinions from both secretaries and their supervisors

regarding secretarial responsibilities. Therefore, the likelihood of bias or misinformation is reduced through comparison and cross-validation of the two groups. As Moscove (1972) indicated, an integrated approach in which both the office worker and his office manager are surveyed, would seem to yield more reliable information than an approach in which just one group is surveyed.

Finally, this study does provide information regarding secretarial responsibilities in 1987 and 1997. Business educators may wish to collect similar data from other populations or for another time period. In such cases, a model is provided which may be used for further research.

Summary

The secretarial occupation is a large, complex, and ever-changing one. The need for frequent evaluation of the occupation is necessary. Business educators must be aware of changes in the office and how they affect the role of the secretary. Secretarial science curriculums can then be revised and updated accordingly to keep pace with the business world.

Existing studies of secretarial responsibilities are geographically limited; and, because of change in offices, existing studies may become dated. These factors

necessitate further and ongoing research of secretarial responsibilities.

This study identified the responsibilities of secretaries in offices in 1987 and 1997 in the geographical area served by Iowa Valley Community College District. Perceptions of both secretaries and supervisors were gathered to reduce the likelihood of bias or misinformation.

The procedures for the study were divided into five steps. These steps included: 1) construction of the survey instrument; 2) validation and approval of the survey instrument; 3) compilation of the mailing list; 4) mailing of the survey instrument; and 5) treatment of the data.

A number of assumptions and delimitations were noted; however, they were not considered damaging to the outcome of the study.

The study was deemed important for many reasons. Some of these included: the percentage of the workforce employed as secretaries was vast and growing, secretarial responsibilities were changing, recent studies of this kind were lacking, and studies of this kind in the geographic area served by Iowa Valley Community College District were not found. In addition, the population for the study included both secretaries and supervisors; and, the study provided a model for continued research of this kind.

Educators must have information regarding current trends in businesses in order to properly train secretaries. Curriculums can then be accurately modified to reflect the current status of today's office and plan for the training of workers in tomorrow's office. This study contributed to that body of knowledge.

CHAPTER 2. REVIEW OF THE LITERATURE

The purpose of this review was to describe variables and present an overview of factors identified in prior research studies, reports, and articles which may be relevant to the problem under investigation. The purpose of the study was to identify responsibilities of secretaries at the time of the study and in ten years in the area served by Iowa Valley Community College District. The perceptions of both secretaries and supervisors were gathered. Accordingly, a review of selected literature encompassed three areas: (1) secretarial responsibilities, (2) the "office of the future", and (3) studies using an integrated approach to data collection. The survey instrument used in this study was compiled from information obtained through the review of the literature in these three areas.

Literature Related to Secretarial Responsibilities

Changes in the office environment may warrant the ongoing study of secretarial responsibilities. Changes in secretarial responsibilities are often complex. The chronological review of selected studies of secretarial responsibilities revealed variations in responsibilities over the years; this review also served to identify common secretarial responsibilities. See Appendix A for a summary of the findings of each study.

In the studies reviewed, a number of terms relating to the meaning of the word "responsibilities" was used. These terms included: competencies, duties, tasks, functions and skills. All of these terms serve to define the role of the secretary in the office and, for the purpose of this study, were considered to be subsumed under the term "secretarial responsibilities."

Wagoner (1967) examined the functions and duties of the secretary to determine change in the responsibilities of the profession. Data were collected through the use of a survey of 188 business organizations in the state of Indiana. Both secretaries and executives were surveyed. The responsibilities identified in the survey were then compared to the role of the secretary derived from conclusions of five prior studies conducted during the past forty years. Conclusions made by Wagoner (1967) indicated the secretary performed two types of duties:

> (1) those which are clerical or general in nature but are performed by the secretary in the capacity of assisting the executive, and
>
> (2) those which are more narrowly defined as secretarial duties for which the secretary is primarily responsible and which require a knowledge and understanding possible only through close contact with the situation (p. 253).

Wagoner also found an increased emphasis in the secretary's role related to written communications and decreased emphasis on duties related to office management and accounting.

Perkins, Byrd and Roley (1968) identified thirteen categories of office tasks performed by office workers. The sample consisted of 295 private business firms and 28 government agencies in five office size categories within each of 12 Standard Industrial Classifications in the state of Washington. Of the 767 questionnaires distributed, 666 were useable. The purpose of their study was to provide a basis for curriculum modification. The tasks were identified by office workers and supervisors on the job and were categorized as follows: (1) typewriting, (2) office machines and equipment, (3) dictating and transcribing, (4) mailing, (5) filing, (6) telephoning and communicating, (7) clerical, (8) securing data, (9) mathematics, (10) financial and recordkeeping, (11) editorial, (12) meeting and working with people, and (13) miscellaneous. They found that these tasks consumed only a portion of the office worker's time and that other tasks varied depending on the worker's job classification.

Erickson (1971) identified and analyzed the components considered basic to most beginning and intermediate levels of office work. He analyzed 300 jobs and ranked the

components in order of their frequency, as follows: (1) communicating with others--90 percent; (2) sorting, filing and retrieving--71 percent; (3) typewriting--49 percent; (4) checking, computing, and verifying--47 percent; (5) collecting and distributing--21 percent; (6) operating business machines (other than typewriting and ADP equipment)--18 percent; (7) operating automatic data processing equipment (ADP)--14 percent; (8) taking dictation--10 percent; (9) supervising, planning, and training--3 percent; and (10) analyzing procedures and flow charting--3 percent.

Gray (1972) compared requirements of junior college secretarial science programs with criteria established by business for employing beginning secretaries. Data from 126 junior college catalogs and information from 50 businesses from 11 southern states were synthesized. She found that duties performed by beginning secretaries in over 50 percent of the companies were: receiving callers; using the telephone; handling outgoing and incoming mail; typing documents; taking dictation in shorthand and transcribing; composing letters; filing; transcribing from a dictating machine; ordering supplies, arranging meetings; making travel arrangements; preparing office reports; screening callers; duplicating; and calculating. The most important characteristics that a secretary should possess

according to the businessmen in the study were: accuracy, dependability, good judgment, initiative and neat appearance. Continued emphasis on English grammar and spelling, typewriting, and shorthand was recommended.

Kusek (1974) studied competencies of secretarial personnel in word processing and traditional offices. Fifty-eight pairs of secretarial personnel and supervisors from offices in the Boston-Worcester and Springfield-Hartford areas of Massachusetts were interviewed. He found that the competencies for word processing and traditional secretarial personnel did not differ significantly. Eleven of thirteen competencies were important for both groups of secretaries, and included: applying language skills, typewriting, proofreading, listening and following verbal instructions, planning the placement of material to be typed, reading and following written instructions, knowing the office procedures followed in a company, recognizing acceptable finished work, establishing work priorities, working as a team with others, and editing material during transcription or typing.

Blanchard (1974) analyzed career variables of high school and junior college secretarial graduates to secure data that could be used for curriculum planning and evaluation. Secretaries from 19 high schools and 2 junior colleges were surveyed. Blanchard found the following

units to be important in a secretarial curriculum: typewriting, shorthand, transcription, business letter writing, business math, filing, calculating and duplicating, introduction to business and management, and secretarial practice. He indicated that students should also be introduced to data processing and computer terminology and functions.

Matthews (1975) identified capabilities required for the performance of modern office work by the use of a survey instrument. The sample consisted of 199 employees in 100 businesses in South Carolina. Matthews utilized the cluster of office tasks associated with major office activities that was developed by Perkins et al. (1968). Survey participants were asked to rank the tasks according to one of five categories: (1) extremely important, (2) above average in importance, (3) helpful to know, (4) nice to know but not important, and (5) useless in this position.

Based on the findings of her study, Matthews (1975) made a number of curricular recommendations. These included:

1. continued emphasis on typewriting with both speed and accuracy;
2. decreased emphasis on the preparation of multiple copies by duplication processes with alternative

emphasis on problem-solving techniques which enable students to select and use the appropriate reproduction or duplication process;

3. teaching the concept of magnetic keyboarding and its applications to office work and not actual machine operation due to the high cost and rapid obsolescence factors;

4. continued emphasis on both speed and accuracy in shorthand and machine transcription;

5. continued emphasis on alphabetic, numeric, and subject filing but not geographic filing;

6. teaching the concepts of workflow;

7. the development of effective communication and human relations skills (pp. 160-163).

In addition to these recommendations, Matthews indicated a need for studies which take into consideration local needs. She stated, "Office occupations instructors should survey businesses in their own localities to determine specific competencies needed for the immediate geographic area" (p. 164).

Whelan (1975) studied the relative importance of secretarial duties and personal traits as perceived by practicing secretaries and prospective secretaries. The sample included 278 secretaries in the National Secretaries Association chapters in North Dakota, California,

Massachusetts, Georgia and Alabama. Findings of importance included: personal traits are more important than secretarial duties according to practicing secretaries; secretarial duties are more important than personal traits according to prospective secretaries; the ability to follow directions is very important; loyalty to the employer is important; modesty is relatively unimportant; punctuality is less important to the oldest group; finding practical solutions to problems is more important to the older group than others; office housekeeping duties do not contribute to success; and attendance at professional meetings is relatively unimportant to professional success.

Powell (1975) analyzed the impact of automated word processing on the secretarial curriculum using 45 subject areas commonly included in a secretarial program. Data were collected through surveying 36 firms in the Denver, Colorado, metropolitan area. Powell's findings indicated a need for preparing students for changing conditions and procedures including information on word processing concepts. Training on magnetic-media typewriters was not considered essential. Basic secretarial skills, English grammar, spelling, proper attitudes towards work, and ability to get along with others were considered important to the secretarial curriculum.

Important skills and competencies required by secretaries were determined by Johnson (1978) in her study to evaluate the adequacy of the secretarial curriculum at Erie Community College. Data were collected through a survey of 110 graduates of Erie Community College and 70 of the graduates' employers. Necessary skills and competencies include: typewriting, shorthand, transcription, business letter writing, filing, secretarial procedures, and duplicating machine operations. Those duties not considered to be important included: secretarial accounting, business mathematics, office calculations, and machine transcription.

Moody (1978) identified essential competencies for entry-level word processing administrative and correspondence secretaries and delegated the responsibility for teaching each competency to either schools or businesses. Data were collected through the use of surveys. Participants in the study included secretaries, supervisors and principals of word processing centers in South Carolina. Moody compiled a list of secretarial competencies from several sources, including the study by Matthews (1975). The competencies were classified under thirteen clusters: (1) typewriting, (2) dictation and transcription, (3) records management, (4) telephone, (5) office machines and equipment, (6) mailing, (7) data

collection and research, (8) financial and bookkeeping, (9) mathematics, (10) grammatical skills, (11) general clerical skills, (12) administrative skills, and (13) general attitude and skills. Respondents were asked to rate competencies in each cluster in one of five categories: (1) very important, (2) important, (3) of some importance, (4) of little importance, and (5) of no importance. Respondents were also asked to delegate the responsibility of teaching each competency to either schools or businesses.

Based on the data collected in the study, Moody made a number of recommendations of importance to office occupations curricula, some of which included:

1. word processing training of both equipment and concepts;
2. typewriting documents with both speed and accuracy;
3. machine transcription of both longhand and recorded dictation;
4. typewriting on correcting selectrics and memory typewriters;
5. shorthand;
6. composition and dictation of correspondence; and
7. grammar.

Murranka (1979) analyzed tasks performed by correspondence secretaries and supervisors in word

processing installations and administrative secretaries. Two instruments, a task inventory and the Position Analysis Questionnaire (PAQ), were administered to job incumbents in Phoenix, Arizona. The PAQ was administered through personal interviews to 45 job incumbents, and the task inventory was administered in written form to 57 job incumbents.

Murranka (1979) found differences in the responsibilities of the two types of secretaries. Typing and machine transcription skills were important components of all three positions. She recommended that administrative secretarial training should include: shorthand, composition, decision-making skills, interpersonal communication skills, and copy machine use. She found that most correspondence secretaries were trained on the job.

Dennee (1981) collected data on word processing competencies for correspondence and administrative secretaries so that educators could make informed decisions about curriculum content. Survey responses were gathered from 18 instructors, 72 supervisors, 60 correspondence secretaries, and 47 administrative secretaries in Wisconsin.

Dennee found competencies important to both the correspondence and administrative secretarial positions.

These include: writing mechanics, proofreading, editing, transcribing, revising, composing, planning, organizing, decision-making, managing time, working under pressure, accepting constructive suggestions, demonstrating initiative, assisting with overflow work, demonstrating problem solving, working with interruptions, and logging documents. Personal improvement skills that were important include: attitude, cooperativeness, loyalty, integrity, punctuality, initiative, and dependability. Equipment-related skills were important for the correspondence secretary only. Skills considered unimportant for the correspondence secretary were: taking shorthand notes, arranging meetings, preparing itineraries, scheduling appointments, interpreting financial reports and dictating office correspondence.

Ellis (1981) examined job competencies and employment opportunities of office occupations in the state of Tennessee. Data were collected through a survey from 234 secretaries belonging to the National Secretaries Association in Tennessee. According to Ellis, competencies that should be a part of the secretarial curriculum included: shorthand, dictating/transcribing skills, perception skills, problem solving and decision making skills, interpersonal relations, and word processing. Most businesses in Ellis's study had word processing equipment;

however, the electric typewriter was the machine used more than any other machine in the office.

In a review of studies titled "Secretaries and Automation" (1986), important secretarial responsibilities involved much interaction and negotiation with other divisions of the organization. Interpersonal skills, responsibility, loyalty, dedication, initiative and enthusiasm were personal characteristics considered important. The traditional secretarial job was seen as changing--being replaced by paraprofessional jobs. As suggested in the article, these jobs might include monitoring the organization of work, maintaining the equipment and software, seeking new applications, negotiating with suppliers and users, and instructing and serving users.

The studies identified reveal the complexity of the secretary's role in the office. Emphasis on any specific set of responsibilities varied by the date of the study and the work environment of the secretaries and administrators surveyed.

In summary, similarities in secretarial responsibilities were revealed; however, many changes or differences in the importance of certain competencies were suggested. (See Appendix A for a comparison of studies.) For example, Johnson (1978) found machine transcription to be an

unimportant secretarial responsibility while Moody (1978) found it to be an important skill. A controversial skill, shorthand, was found to be important by Ellis (1981), Johnson (1978), Moody (1978), Murranka (1979), and others. Bookkeeping was found to be an unimportant secretarial responsibility by many, i.e., Dennee (1981), Ellis (1981), Johnson (1978), and Wagoner (1967). These studies of secretarial responsibilities, as well as literature related to the office of the future, are important to an assessment of present and future secretarial responsibilities.

The Office of the Future

Significant changes in office technology have occurred since 1967 when Wagoner studied secretarial duties and functions in businesses. Before 1960, changes in offices occurred gradually and the basic characteristics of the office remained intact. Since the appearance of word processing in the mid-1960s, the traditional office has faced many technological changes. As Moody (1978) states, ". . . the office of the future will not be an extension of the past" (p. 1).

In order to exist, companies have been forced to remain competitive by increasing productivity through the use of electronic tools. The volume of information offices must handle continues to grow. New, automated methods of handling that information have been introduced into many

offices. Automation of secretarial tasks through the use of office technology has taken place. This automation has changed how the secretary accomplishes tasks, and it has given the secretary time to take on additional responsibilities.

The secretary's role in the future office is not known. However, by examining technological innovations and office trends and forecasts, assumptions about the secretary's role in the "office of the future" can be made. Literature important to the future office follows.

Technologies in the "Office of the Future"

A description of some of the technologies that will play a part in the secretary's role in the office follows. However, the specific technologies are beyond what is expected to be known by the secretaries and supervisors surveyed in this study; thus the specific names of these technologies were not used on the survey instrument. A brief discussion of these technologies is, however, provided to better understand the impact of technological change on the role of the secretary.

According to a selected review of the literature, several technological developments will play a part in changing the office of the future (Bergerud & Gonzalez, 1987; Casady & Sandburg, 1985; Gibson & Rademacher, 1987;

and Wagoner & Ruprecht, 1987). Three of those technological developments are: artificial intelligence, information processing subsystems, and the integration of these subsystems through electronic communication systems. These technological inventions exist today but they are not widely used in offices. It is not known yet how these technologies will affect the secretary's role in the office.

Artificial Intelligence (AI)

Bergerud and Gonzalez (1987, p. 400) define artificial intelligence as "The capability of a computer that through programming performs human functions such as reasoning, learning and self-improvement." Teaching computers to reason like humans is the goal of this technology. Computers can apply logic to solve problems with a higher degree of accuracy than humans since computers are not affected by adverse conditions, such as fatigue. The most progress in the area of AI is in the development of expert systems (Drake, 1986). However, research is being conducted on robotics, vision systems, and voice processing.

The ability of a computer to detect the malfunction of an automobile as an automotive technician would do is one example of an expert system. Another example of an expert system is one that assists physicians in diagnosing

patients. When developing these systems, experts on a given subject are interviewed and a series of "if-then" rules are programmed into a knowledge base. Users of the system are asked to respond to a series of questions. The user's responses are then manipulated through the knowledge base until an answer is provided by the expert system (Drake, 1986). The knowledge base can be preserved, duplicated, distributed and used in place of human practitioners who are fallible.

Voice processing, another form of AI, has been perfected and will be used to a greater extent in the "office of the future." According to Ruprecht and Wagoner (1986), "Six basic kinds of voice based systems are expected to appear in our office environment within the next decade: (1) voice recognition; (2) voice response; (3) voice identification; (4) voice mail; (5) language training; and (6) language translation" (p. 16).

Voice processing could have a major effect on the role of the secretary by eliminating the need for certain responsibilities. Specifically, voice mail could eliminate the need for the secretary to answer the telephone and take messages. Voice recognition could eliminate the need for the secretary to transcribe the spoken word into readable form. Presently, telephone receptioning and transcription

are two primary functions of the secretary. However, as suggested, this may change.

Some of the barriers to voice processing have been the inability of devices to recognize continuous speech, the voices of many speakers and many words, the handling of tones, accents, and variations in pronunciation and the differentiation of synonyms (Wagoner & Ruprecht, 1986, p. 16). There are, however, a number of systems on the market today which have limited vocabularies and near 100 percent accuracy.

According to Bergerud and Gonzalez (1987), five important reasons for taking advantage of AI capabilities are:

1. to preserve knowledge that might be lost through the retirement, resignation, or death of a company's acknowledged expert in any field.
2. to "clone" or reproduce mechanically an expert's knowledge so that it can be disseminated to others.
3. to store information in an active form--a knowledge base--rather than a passive one--a textbook or manual.
4. to give novices an aid that will help them think as more experienced professionals do.
5. to create a mechanism that is not subject to human failings such as fatigue and can hold up in

positions where information must flow constantly (p. 375).

As the capabilities of AI are perfected, numerous applications, business and otherwise, will occur. Once the knowledge needed for these applications is captured, the market for AI is likely to expand. According to Wagoner and Ruprecht (1987, p. 381), the AI market is expected to skyrocket to a 4.25 billion dollar industry by 1990. It is unclear exactly how and how soon AI will affect the role of the secretary; however, it is one example of technology that will undoubtedly be influential in the office.

Information Processing Subsystems

As information is processed in offices, it flows through a work cycle. According to Casady and Sandburg (1985), the steps in the cycle include (a) input, (b) output, (c) revision, (d) reproduction, (e) distribution, and (f) storage. The four forms information can take are: data, image, voice and/or text. Various technological subsystems are used for processing the four forms of information in each step of the work cycle.

Basically, information processing subsystems include computer data processing, electronic filing, image processing, intelligent copiers, micrographics, photo-typesetting, reprographics, scanners, telecommunications, teleconferencing, voice processing, word processing, and

others. The subsystems of information processing identified are defined by Wagoner and Ruprecht (1987) as follows:

Data Processing - the manipulation of numbers through various computations to deliver meaningful totals and create useful statistical information.

Electronic Filing - the storage of information on disks and other magnetic media instead of in hard-copy format.

Image Processing - the digitizing of images as part of information on a disk, perhaps as output for applications such as desktop publishing.

Intelligent Copiers - copiers that can electronically store materials such as often-used forms, and thereby eliminate the need for hard-copy storage facilities.

Micrographics - the process of recording and reducing paper documents or computer-generated information on film and providing a system to store and retrieve that information.

Phototypesetting - a method by which information can be reproduced efficiently through a printing process that prints characters optically by taking pictures of them at high speeds.

Reprographics - the various techniques of replicating information with the ultimate objective of distributing it in some form. Replication techniques include printing, phototypesetting, duplicating, and COM (computer output microfilm).

Scanners - devices that electronically read documents and transfer them to storage or display, or to another form of output.

Telecommunications - the ability to communicate, either transmit or receive, over long distance via cable, telephones, telegraph, or television.

Teleconferencing - the transmitting of the pictures, along with the voice, of those involved in a telephone conference.

Voice Processing - the digitizing and manipulation of voice transmissions by computer.

Word Processing - the transferring of an idea or thought into a final error-free document by means of an automated system of word productivity (pp. 391-412).

The use of each of these technologies introduce new office procedures to the office. As Goddard (1985) wrote, "the technological revolution is flattening bureaucracies, altering controls, and fundamentally changing the relationship between workers and their jobs, managements,

and organizations" (p. 8). He writes further that, "companies are beginning to invert their hierarchical pyramids, decentralize decision making and move accountability to where the work takes place" (Goddard 1985, p. 9). This could mean greater responsibility for "secretaries" who survive the technological revolution. As was stated in the article "Advanced Technology and the Changing Role of Secretaries," (1986) "Tomorrow's secretary may become an office information manager, with responsibility for understanding how office automation systems can be used" (p. 22). Undoubtedly, these subsystems will affect the role of the secretary in the office.

The Integration of Subsystems of Information Processing Through Electronic Communications Systems

The integration of all of the office technologies may change office structures in the next decade, affecting the secretary's place in the office. As indicated by Bergerud and Gonzales (1987), "the integration of information processing technologies using networking is the trend for the workplace of tomorrow" (p. 352). The goal of integrating subsystems is to improve information flow and productivity in offices.

As indicated by Drake (1986), "One of the biggest challenges facing programmers and systems analysts is to

link up all the computer systems within establishments, companies, or government agencies and to link these institution's computers to the outside world" (p. 10). According to Saffer (1986), currently, only a small percentage of today's businesses have totally integrated technological systems. Eighty percent of businesses have introduced technology to their office automation systems and are moving toward integration at varying degrees. About 10 percent of businesses are trailing behind by just now purchasing their first piece of automated equipment (Saffer, 1986, p. 161). Competition will continue to force businesses to install and upgrade electronic communications systems which will enable them to transmit or receive information over long distances.

Transmission mediums which enable systems to communicate include: communications satellites, fiber optics cable, microwave systems, cable, and cellular transmission (Saffer, 1986). These mediums can be used to connect offices around the world providing instantaneous information and communication.

Electronic communications through the use of integrated systems can take many forms. As defined through a number of authors, some of these include:

electronic mail - a system of communicating messages electronically to a recipient who receives either a

hard copy or a visually displayed message on a CRT screen. The message may be transmitted electronically by facsimile, communicating word processors, computer-based message systems, public-carrier-based systems, public postal services, or private and public teletypes (Wagoner & Ruprecht, 1987, p. 396).

voice mail - a system for storing and forwarding voice messages to specified recipients or lists of recipients and receiving incoming messages that are stored in electronic mailboxes (Palmer & Ray, 1987, p. 452).

electronic conference - a business meeting in which participants at remote locations communicate through use of audiovisual networks (Smith, Alexandria, & Medley, 1986, p. 578).

electronic calendaring - method of maintaining work schedules and appointments through the use of software that displays a calendar-like grid in which text entries can be made (Smith, Alexander, & Medley, 1986, p. 578).

These technological advancements may not change the need for communication in offices. However, the technological developments may change the methods by which communication takes place and secretaries will be forced to use new methods.

Again, the specific technologies mentioned here were not used on the survey instrument because they would not necessarily be familiar to the majority of the survey participants. However, as previously stated, a review of these technologies was necessary to better understand the potential impact of technological change on the role of the secretary.

Studies of the "Office of the Future"

Studies forecasting trends in offices of the future follow. The date used as the "future" in three of the studies reviewed has passed. However, the design and content of the studies are important to the organization of this research. Methods of futuristic assessment were examined, as well as the content of futuristic questions being asked.

O'Sullivan (1977) used the Delphi technique to obtain the forecasts of business people and educators concerning the importance of word processing systems in the office of 1984 for the purpose of modifying the business education curriculum. Three panels of experts, 20 each, of administrators and middle managers from major firms in Chicago and teachers from the City Colleges of Chicago were administered the surveys in three stages. O'Sullivan predicted from the results of her study that word processing would become a reality in offices and that word

processing training would become essential. She recommended less emphasis in the curriculum on shorthand and more emphasis on machine dictation and transcription, alphabetic note systems, and traditional office skills.

Many of O'Sullivan's (1977) predictions became realities, i.e., the implementation of word processing. Her study was important in designing the framework of this research. She recommended the use of a survey as an alternate forecasting technique because it would be more "economical and practical" (p. 148) than the Delphi technique. She also indicated how important studies of the future are to educators and that the future requires constant assessment and review (p. 149).

Hobson (1982) examined the use of word processing in businesses and attempted to determine what plans businesses had for the expansion of word processing systems and other emerging technologies. A nine-part survey instrument was administered to 50 word processing managers and supervisors representing the Word Processing Association of Richmond, Virgina. Hobson found that the use of word processing was expanding and was being integrated with other technologies, such as: data processing, intelligent copiers, electronic mail, OCR, micrographics and telecommunications. This study showed that businesses were implementing new

technologies but it did not analyze how those technologies affected the secretary's role in the office.

Stoufer (1982) compared business educators' perceptions of the critical issues arising from the "Office of the Future" concept in relation to two-year office technology programs. The population of the study consisted of two groups of individuals--national business education leaders who were currently publishing and researching the "Office of the Future" and Ohio business educators who were teaching in two-year office technology programs. Stoufer recommended that training be based on the needs and demands of the regional area served by the school. Areas identified as being of major importance for employees in the "Office of the Future" were language arts skills, communication skills (oral and written), word processing knowledge, and integrated information systems knowledge.

Fusselman (1986) described a study conducted by the 16-member Panel on Technology and Women's Employment, established by the National Research Council's Committee on Women's Employment and Related Social Issues. The study was conducted over a two-year time period and examined the effects of technology on the quantity of women's employment opportunities and on the quality of their jobs. Fusselman stated, "The lines between secretarial and professional/managerial work may blur as secretaries

increase their access and ability to manipulate information, allowing them to generate analytical reports" (p. 11). She concluded that secretarial jobs will not be lost due to automation because personal relationships that are part of the secretarial job are not amenable to automation. A need for a basic education which includes reading, writing, computing, problem solving, and critical thinking is emphasized.

Summary of Studies on the Office of the Future

Unavoidable technological changes are coming to the office. As Smith, Alexander and Medley (1986) stated, "These changes, though major, are not likely to lead to the replacement of the secretary. Rather, further office automation should enhance the role of experienced secretaries" (p. 115). Smith et al. (1986) also concluded:

> Changes in secretarial roles observed in Office Automation pilot studies include transitions from student to teacher, from typist to editor, and from clerk to thinker. Also, expectations change as managers and other internal clients expect work of higher quality with increasingly shorter turnaround (p. 465).

Before 1960, changes in the office occurred gradually and the basic characteristics of the office remained unchanged. Since the appearance of word processing in

the mid-1960s, the traditional office has faced many technological changes at an ever-increasing rate and more changes are forecast for the future. As Moody (1978) stated, "the office of the future will not be an extension of the past" (p. 1). Consequently, the continual need for new information about the "secretary's" role in the office is significant. Before changes reflecting the applications of emerging technologies can be introduced into the curriculum, how these changes will alter secretarial responsibilities must be determined.

The Integrated Survey Approach

Six studies reviewed (Dennee, 1981; Johnson, 1978; Moscove, 1972; Roberts, 1975; Sanders, 1977; and Wagley, 1975) researched the perceptions of both secretaries and supervisors regarding secretarial responsibilities and office technology. The secretary and supervisor are both knowledgeable survey participants. The secretary performs the tasks of the job and, the supervisor is aware of the secretarial duties and attitudes necessary for successful job performance. To reduce the likelihood of misinformation or bias, this study included both secretaries and supervisors in the sample population. A review of previous studies using this approach follows.

Moscove (1972) studied the opinions of 400 office workers and their office managers in the nation's 14 largest cities. She surveyed these people to gather information about the office worker's role. She found significant differences of opinion between the two groups with respect to: (1) the office workers' competencies in performing specific office duties, (2) the frequency and desirability of the office workers' decision-making opportunities, (3) the office workers' decision-making competencies, (4) the importance of specific decision-making traits to the office workers, and (5) the degree to which the office workers possess and exhibit these specific decision-making traits. Similarities in opinion among office workers and their office managers existed with respect to: (1) the specific duties involved in office work, (2) the frequency of specific machine operating duties involved in office work, (3) the degree of competence with which office workers perform specific operating duties, and (4) the present and future trends for office workers.

Wagley (1975) studied the degree of office skill needed by the beginning office employee according to high school business education teachers, employers, and employees in Montgomery County, Ohio. A questionnaire and visitations were used to collect data. He found

differences in opinion regarding the degree of office skill needed among all three groups and, particularly, among employers and beginning office employees.

Sanders (1977) identified competencies needed by beginning secretaries and the affect of demographic variables on the perceptions of those competencies. Included in the sample were 75 secretaries who were members of the National Secretary Association of Georgia and South Carolina; 73 office managers who were members of the Administrative Management Societies of Georgia, South Carolina, and Tennessee; and 48 business teachers who were members of the National Association for business teacher education in twelve southern states. The data were collected through the use of a two-part questionnaire. She found a "gap between the perceptions of the secretaries, office managers, and business teacher educators regarding the competencies that are performed by secretaries" (p. 108). The job of the respondent was more influential in the determination of the competency than age, sex, educational level, work experience, or size of office. She recommended conducting a similar study utilizing a secretary-executive pair employed in the same office to determine if a difference in perceptions of job competencies still existed (p. 111).

Dennee (1981) studied the perceived importance and frequency of entry-level word processing competencies so that educators could make curriculum decisions. A survey instrument was used to collect data from 18 instructors, 72 supervisors, 60 correspondence secretaries, and 47 administrative secretaries in Wisconsin. She found significant differences of opinion among all groups when rating word processing competencies.

In a study to determine the adequacy of the secretarial and clerical programs of the Arkansas Area Vocational-Technical Schools, Roberts (1975) surveyed 74 secretarial/clerical graduates of the school, teachers at the school, and employers of the graduates. He found that graduates, employers and teachers were not in agreement on graduates' abilities to perform twelve of thirteen skills studied.

Another study to determine the adequacy of secretarial programs at Erie Community College was completed by Johnson (1978). She used two instruments, a graduate questionnaire and an employer questionnaire. Data were collected from 110 secretarial graduates and 70 employers. Johnson indicated that there was agreement among employers and employees regarding secretarial skills and competencies.

Matthews (1975) identified capabilities required for the performance of modern office work through the use of a

survey. A random sample of 199 employees in 100 businesses in South Carolina was surveyed to collect data for the study. Based on the findings, Matthews indicated a need to determine whether a survey of employees and supervisors would yield the same data as that provided by secretaries (p. 164).

As indicated by Moscove (1972), "the integrated survey approach has considerable merit as one aspect of curriculum revision and development" (p. 154). This approach is valuable because discrepancies or similarities that occur between the two groups of respondents can be identified and and analyzed to determine why they do exist and whether or not the discrepancy would affect a secretarial curriculum. The secretary's job can be studied from both the supervisor's perspective and the secretary's perspective. Implications for advisory committee composition may be made. According to the literature reviewed, the information obtained by surveying both secretaries and their supervisors promotes greater understanding of the findings and makes the data more reliable.

Summary of Review

In summary, secretarial competencies are broad and constantly changing. The chronological review of studies of secretarial responsibilities revealed a complex secretarial role in the office. Wagoner (1967) found

changes in secretarial functions and duties in comparing the results of her study in 1967 to previous studies. In 1967, Wagoner made the following observations about the changing role of the secretary. These included: (1) more emphasis on written communication, (2) less emphasis on office management, and, (3) less emphasis on the bookkeeping or accounting function. These changes noted by Wagoner were attributed primarily to the impact of the computer on the office. Today, the technology in offices continues to affect the secretary's position ("Secretaries and Automation," 1986).

Automation has changed the role of the secretary. Until recently, changes experienced by secretaries in offices were due primarily to the advent of word processing. With word processing came work specialization or a division of secretarial tasks into administrative and correspondence duties (Dennee, 1981; Moody, 1978; and Murranka, 1979). Now, as many routine jobs become automated, personal traits and initiative to take on other tasks become important (Dennee, 1981; Ellis, 1981; "Secretaries and Automation," 1986). Monitoring and operating automated equipment are examples of new tasks expected of the secretary ("Secretaries and Automation," 1986).

With increased automation, secretarial responsibilities in today's office continue to change. More studies on the secretary's role in specific geographical areas are needed to meet the needs of businesses in the community. Sanders (1977) indicated a need for further studies to develop and refine competency statements for secretaries (p. 111). Matthews (1975) indicated a need for additional studies to determine specific competencies for the immediate geographic area (p. 164). Ellis (1981) indicated that additional studies should be made of job competencies in the areas which serve graduates of the community colleges to help faculties develop curriculums. In response to the changes in the office, information and, thus, direction for designing secretarial curriculums must be obtained in the geographical areas served by educational institutions.

As O'Sullivan (1977) stated, "Educators, particularly those preparing students for career entry, need to be aware of trends and forecasts to prepare students not only as future office employees, but as individuals capable of developing their own full potential" (p. 27). Through the use of an integrated survey, in which the perceptions of both secretaries and supervisors are gathered, valuable information can be collected and analyzed by business educators. Differing perceptions may be due to dissimilar

knowledge or expectations of the secretary's realistic role. For example, the supervisory perspective may represent a desire to move toward a particular responsibility; the secretarial perspective may represent importance of responsibilities based on time spent on the task. Nevertheless, both present and future opinions regarding secretarial responsibilities from both the supervisor and the secretary would provide for more and better advanced planning and preparation of the secretarial curriculum.

The purpose of this study was to clarify the secretary's role in offices in the area served by Iowa Valley Community College District. The information obtained through the research is intended for use by business educators in making necessary modifications to the secretarial curriculum. Educators may be better able to anticipate changes in job responsibilities and prepare students for realistic secretarial positions both now and in the decade to come.

CHAPTER 3. PROCEDURES FOR THE STUDY

The procedures for this study were divided into five steps: 1) construction of the survey instrument; 2) validation of the survey instrument; 3) compilation of the mailing list; 4) mailing of the survey instrument; and treatment of the data. An explanation of each step follows.

Construction of the Survey Instrument

The survey instrument (see Appendix B) developed in this study was designed to determine secretarial responsibilities in offices today and in 10 years. In developing the survey instrument, the following steps were taken. First, a review of literature relating to secretarial responsibilities, the office of the future, and integrated surveys was completed. From this review, a survey instrument was designed which contained common secretarial responsibilities from the past and responsibilities that the literature suggested would exist in the future. General responsibilities, equipment-related responsibilities and subject area knowledge were the three areas of focus. Personal traits, although important, were not taken into consideration in this study.

The survey was designed as a checklist for ease and speed in completion. The following information was obtained through questions on the survey instrument:

(a) job title, (b) number of secretaries employed in the business, (c) type of business, (d) opinions on how technology will affect secretarial responsibilities in 10 years, and (e) the importance of responsibilities and subjects. Responsibilities were divided into two categories: general and equipment-related. Four categories were used in the survey to determine the existence of secretarial responsibilities and subjects both in 1987 and 1997 according to secretaries and their supervisors. The four categories were: (a) very important, (b) somewhat important, (c) of little importance, and (d) not applicable. Each responsibility could be checked by the survey participant according to its importance or applicability in 1987 and in 1997.

Validation and Approval of the Survey Instrument

The survey used in this study was validated by two groups of people--community college business education instructors in the state of Iowa and secretarial students at Marshalltown Community College. These two groups evaluated the content of the survey.

The survey designed for this study was original; therefore, it was necessary to obtain expert opinion regarding the validity of the survey. Initially, phone calls were made to business education instructors at the

community colleges in Iowa to obtain their assistance in validating the survey. Twenty-eight instructors agreed to participate and are listed in Appendix C. Each instructor was sent a letter (see Appendix D) explaining the validation process and a copy of the survey. A teleconference was held via the Community College Telenet System--an audio conference call connecting all community colleges in Iowa. Instructors were asked to critique the survey prior to the teleconference. During the teleconference, instructors expressed concerns regarding each question on the survey. Specific suggestions included: reducing the length of the survey, eliminating the technical jargon, and eliminating ambiguous questions. Comments, criticisms, and suggestions of the instructors were considered and the survey was modified accordingly. Each instructor was asked to send his copy of the critiqued survey back to the researcher for verification of corrections. Additional comments on the surveys were considered and revisions to the survey were made.

The modified survey was then given to a group of 20 one- and two-year secretarial students for additional critique and comment. Suggestions were noted and the survey was modified accordingly.

Letters of introduction to the supervisor and the secretaries participating in the research were written.

Also, a follow up-letter to the supervisor was written to be used to send to those survey participants who did not return the survey after the first mailing.

The revised survey, the introductory letter, and the follow-up letter were then sent to the Human Subjects in Research Committee at Iowa State University for approval. The committee is concerned with protecting the subjects of research. Approval was attained on June 8, 1987.

The survey and letters were typed and duplicated at a printer's shop. The final survey consisted of two 8 1/2 by 11 inch typewritten pages. The return address and pre-paid postage were stamped on the back of the second page of the survey so it could be folded by the survey participant and returned in the mail.

Compilation of the Mailing List

The mailing list was compiled from the "yellow pages" of the telephone directories of the six largest cities or towns in the area served by Iowa Valley Community College District. The six largest cities are: Marshalltown, Grinnell, Iowa Falls, Eldora, Tama and Toledo. (See Figure 1 for a geographical representation of this area.)

A ten percent random sample was taken from the "yellow pages" of the telephone directories. A total of 864 businesses was included in the sample. Some of the entries

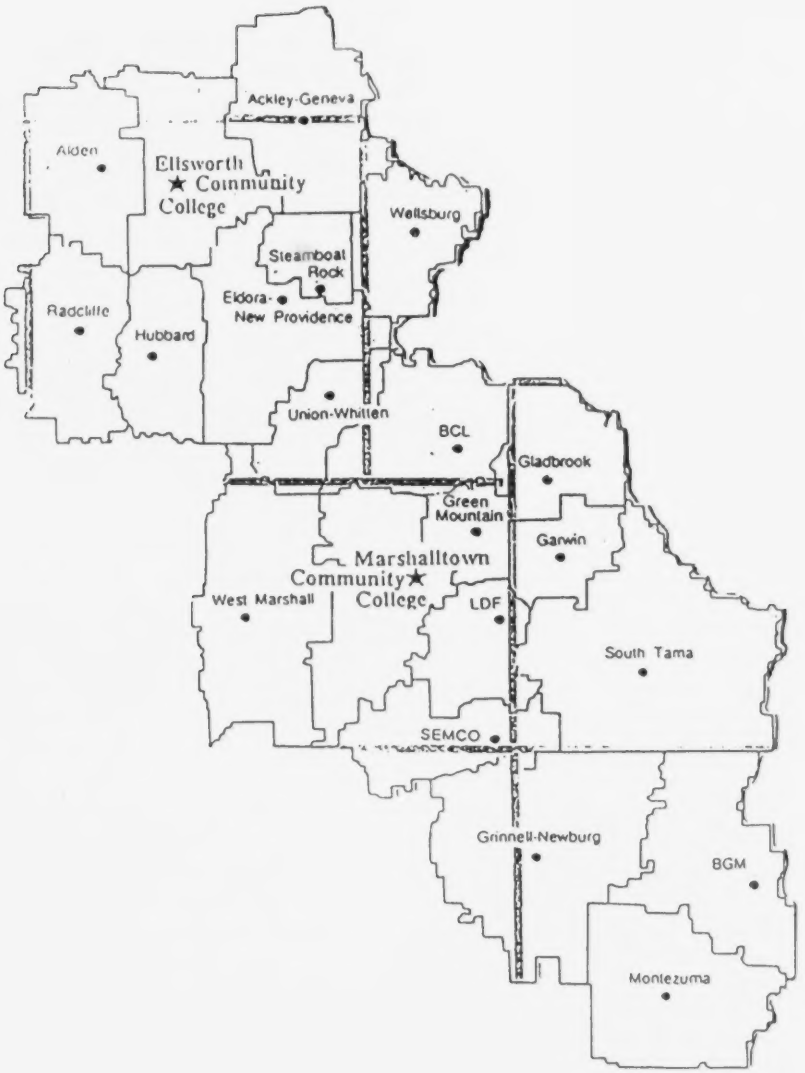

Figure 1. Geographical area served by Iowa Valley Community College District in the state of Iowa

in the "yellow pages" were bypassed for the following reasons:

1. entry was not in the area served by Iowa Valley Community College District
2. entry was a duplicate
3. no address was listed
4. entry was a residence, i.e., pastor's home
5. entry was a business not likely to employ a secretary (i.e., taverns)

Two sets of mailing labels were typed for each of the businesses in the sample--one set for the original mailing and one for the follow-up mailing.

Mailing of the Survey Instrument

To introduce the survey to the subjects, letters were written to the supervisor and the secretary of the business (see Appendixes E and F). Upon approval of the Dean, Marshalltown Community College letterhead and envelopes were used as stationery. Enclosed with the letter to the supervisor were two surveys and the letter to the secretary of the business. The surveys were numbered to identify which businesses returned the surveys so a follow-up mailing could be completed. Upon return of the surveys, the identification codes were destroyed. The surveys were designed with return postage and an address on the backside so they could simply be folded and dropped in the mail. In

two weeks, a follow-up letter (see Appendix G) and additional surveys were sent to those who had not responded to the original mailing. Out of the 864 surveys mailed to supervisors and the 864 surveys mailed to secretaries, 177 and 186 were returned respectively. Of those returned, 168 or 19.4% of the secretaries' surveys were useable, 156 or 18% of the supervisors' surveys were useable, and 34 or 3.9% "other" job category surveys were useable.

Treatment of the Data

As the surveys were returned, the data was compiled, coded, and analyzed through the use of a computer. The first objective of the study was to identify the responsibilities of the secretary in 1987 and 1997 in District VI. The responsibilities were rated by importance through frequency distributions. The significant importance or applicability of the responsibilities was presented in tabular form and discussed in narrative form.

The second set of objective and hypotheses was to identify differences of opinion between secretaries and supervisors regarding responsibilities of secretaries in 1987 and 1997. Significant differences of opinion were identified through the use of the Student's t test. The differences were presented in both narrative and tabular form.

The third set of objective and hypothesis was to project the role change of secretaries from 1987 to 1997. Significant differences in the role of the secretary from 1987 to 1997 were determined through the use of the Student's *t* test.

Summary

For this study of secretarial responsibilities in 1987 and 1997 in the area served by Iowa Valley Community College District, a survey instrument was designed. It was based on a review of literature on secretarial responsibilities, the future office, and integrated survey approaches. The instrument was validated by community college business education instructors in Iowa and secretarial students at Marshalltown Community College. It was approved by the Human Subjects in Research Committee at Iowa State University on June 8, 1987. The researcher administered the survey instrument to supervisors and secretaries in 864 businesses in District VI.

Descriptive statistics were used to analyze the data collected from the population of secretaries and supervisors. The results of the analysis are presented in Chapter IV.

CHAPTER 4. FINDINGS

This study measured the importance of secretarial responsibilities in 1987 and 1997 in the area served by Iowa Valley Community College District according to secretaries and supervisors. The results of the major findings of the research are presented in this chapter. Information on the following areas is included:

1. Demographic characteristics;
2. Change in secretarial responsibilities;
3. Importance of secretarial responsibilities in 1987 and 1997; and
4. Hypotheses testing
    a. Difference of opinion between secretaries and supervisors regarding secretarial responsibilities in 1987 and 1997
    b. The role change of the secretary from 1987 to 1997

Findings are presented in both tabular and narrative form. A detailed analysis of the data collected is included in the appendices.

Demographic Characteristics

Demographic characteristics were collected to describe the sample population of the study. These included: job

title, number of secretaries employed, and type of business.

Surveys were sent to secretaries and supervisors in 864 businesses in the area served by Iowa Valley Community College District--a total of 1,728 surveys. Of those returned, 358 were useable--a 20.7% response rate overall. The response rate was 19.4% for secretaries and 18% for supervisors. The job classification "other" included 34 of the returned surveys. The number of surveys returned and percentages by job title are shown in Table 1.

Table 1. Distribution of sample population by job title

Job Title	Population	Frequency received (N = 358)	Percentage of population
Secretary	864	168	19.4%
Supervisor	864	156	18.1%
Other		34	
Total	1,728	358	20.7%

Table 2 shows the response rate which represents a fairly even distribution between secretaries and supervisors. Of the 358 surveys returned, secretaries represented 46.9% of the respondents, supervisors 43.6%, and the "other" job classification 9.5%.

Table 2. Distribution of responses by job title

Job Title	Frequency received (N = 358)	Percentage of respondents
Secretary	168	46.9%
Supervisor	156	43.6%
Other	34	9.5%

Table 3 illustrates the distribution of the number of secretaries employed in the business. Of those responding to the question, 93.5% of the businesses employed 1 to 5 secretaries, 4.9% employed 6 to 25 secretaries, and 1.5% employed 26 or more secretaries.

Table 3. Distribution of number of secretaries employed in the business

Number employed	Frequency of those responding	Percentage of those responding
1 - 5	303	93.5%
6 - 25	16	4.9%
26 or more	5	1.5%
Total	324	100.0%

Missing cases: 34

The type of business the respondents were employed in is indicated in Table 4. The service industry represented 50.6% of the respondents. Government and trade industries represented 15.4% and 14% respectively.

Table 4. Distribution of type of business respondents were employed in

Type of business	Frequency received (N = 358)	Percentage of respondents
Service	181	50.6%
Government	55	15.4%
Trade	50	14.0%
Manufacturing	15	4.2%
Agriculture	14	3.9%
Financial	14	3.9%
Religious	13	3.6%
Other	16	4.4%
Totals	358	100.0%

In comparison, the United States Bureau of the Census (1985) identified the representation of establishments in the area as follows. Service establishments represented 24.4% of the industries and employed 20.2% of the employees in the workforce. Governmental industries were not identified by the Bureau of the Census as an industry. The trade industry represented 40.9% of the industries in the area and 31.7% of the workforce. Manufacturing was also identified by the Bureau as a major industry in the area representing only 5.3% of the businesses but employing 30.4% of the workforce.

Change in Secretarial Responsibilities

Respondents were asked to indicate what affect they felt technology would have on secretarial responsibilities

in 10 years. Table 5 illustrates the distribution of responses.

Table 5. Affect technology will have on secretarial positions in 10 years

Affect	Frequency responding (N = 351)	Percentage responding
Significant change	163	46.4%
Moderate change	138	39.3%
Slight change	36	10.3%
No change	12	3.4%
Positions will not exist	2	.6%
Total	351	100.0%
Missing cases: 7		

Of those responding, 46.4% forecasted a significant change in secretarial responsibilities in 10 years, 39.3% forecasted a moderate change, 10.3% a slight change, 3.4% no change, and .6% believed that secretarial positions would not exist.

Importance of Secretarial Responsibilities in 1987 and 1997

The results of Objective Number One are presented here. Objective Number One was to identify the responsibilities of the secretary in 1987 and 1997 in businesses in the area served by Iowa Valley Community College District. To accomplish the objective, secretaries

and supervisors were asked to evaluate the importance of secretarial responsibilities in 1987 and 1997 in the area served by Iowa Valley Community College District. A frequency distribution was applied to the data to determine the cumulative degree of importance of each responsibility and subject.

Table 6 illustrates the percentage distribution of secretarial responsibilities and subjects by importance in businesses in 1987. Twenty-one of those responsibilities and subjects were considered "very important" by over 50% of those responding. From highest percentage to lowest percentage, general and equipment-related responsibilities included: handle telephone duties, type with accuracy, meet the public, organize and use a file system, organize and prioritize work, handle mailing tasks, operate a copy machine, communicate ideas verbally, operate a calculator, proofread and edit, operate an electric typewriter, compose office correspondence and reports, requisition and maintain office supplies, and handle administrative responsibilities. From highest to lowest percentage, subjects considered "very important" by over 50% of the respondents included: business English, English and communications, management of filing systems, accounting/bookkeeping, math, business mathematics, and office management.

In addition to those responsibilities listed as "very important," over 50% of the respondents indicated that the following responsibilities and subjects were at least "of some importance." From highest to lowest percentage, the general and equipment-related responsibilities included: solve problems and make decisions, type with speed, research information, operate an electronic typewriter, select office equipment, maintain equipment and software, arrange meetings and conferences, and operate a word processor. From highest to lowest percentage, subjects included: business management, humanities, word processing concepts, and social science.

Those responsibilities indicated as "not applicable" in 1987 by over 50% of those responding from highest percentage to lowest percentage included: use other computer applications, use voice mail, use a micrographics filing system, use electronic calendaring, use electronic mail, use graphics software, arrange electronic conferences, use financial applications, take and transcribe shorthand, and use spreadsheet software. The subject considered "not applicable" in 1987 by over 50% of the respondents was medical secretarial procedures.

Table 6. Percentage distribution of the importance of secretarial responsibilities and subjects in 1987

Item No.	Responsibility or Subject	Percentage Distribution: Very Important	Somewhat Important	Of Little Importance	Not Applicable	Missing Cases
1.	Arrange meetings and conferences	26.1%	30.4%	21.5%	22.1%	9
2.	Arrange electronic conferences	3.2%	14.0%	25.1%	57.6%	16
3.	Compose office correspondence and reports	59.1%	28.9%	8.9%	3.1%	8
4.	Communicate ideas verbally	69.5%	24.7%	4.4%	1.5%	14
5.	Handle administrative responsibilities	50.3%	31.6%	11.3%	6.8%	4
6.	Handle mailing tasks	72.7%	22.5%	3.9%	.8%	3
7.	Handle telephone duties	88.7%	8.7%	1.4%	1.1%	3
8.	Make travel arrangements	12.6%	21.3%	25.9%	40.2%	10
9.	Meet the public	83.3%	10.5%	4.5%	1.7%	4
10.	Organize and priortize work	79.5%	14.2%	5.4%	.9%	6
11.	Organize and use a filing system	80.7%	16.7%	2.0%	.6%	5
12.	Proofread and edit	65.2%	21.8%	4.9%	8.0%	10
13.	Requisition and maintain office supplies	58.9%	30.9%	7.1%	3.1%	5
14.	Research information	22.3%	37.3%	26.9%	13.6%	12
15.	Solve problems, make decisions	43.6%	41.5%	12.0%	2.9%	9
16.	Take and transcribe shorthand	5.5%	11.5%	29.1%	53.9%	11
17.	Use a micrographics filing system	3.5%	7.7%	17.4%	71.4%	19

Table 6. (continued)

Item No.	Responsibility or Subject	Percentage Distribution				
		Very Important	Somewhat Important	Of Little Importance	Not Applicable	Missing Cases
18.	Maintain equipment and software	28.2%	29.3%	15.8%	26.7%	10
19.	Operate a calculator	68.8%	18.5%	10.2%	2.6%	6
20.	Operate a copy machine	71.3%	19.7%	5.1%	3.9%	3
21.	Operate a word processor	37.6%	16.8%	12.7%	32.9%	12
22.	Operate an electric typewriter	64.6%	20.2%	5.1%	10.1%	2
23.	Operate an electronic typewriter	43.3%	16.1%	8.8%	31.9%	16
24.	Select office equipment	26.8%	31.8%	20.7%	20.7%	15
25.	Machine transcription	24.1%	13.3%	14.2%	48.4%	13
26.	Type with speed	39.7%	36.8%	15.8%	7.8%	10
27.	Type with accuracy	84.3%	11.1%	1.4%	3.1%	7
28.	Use database software	25.0%	18.0%	11.0%	45.9%	14
29.	Use electronic calendaring	6.8%	14.2%	12.4%	66.6%	20
30.	Use electronic mail	8.2%	9.7%	16.8%	65.3%	18
31.	Use financial applications	16.1%	16.7%	12.9%	54.4%	16
32.	Use graphics software	7.1%	13.4%	18.5%	61.0%	22
33.	Use spreadsheet software	15.9%	16.5%	14.5%	53.1%	19
34.	Use voice mail	5.1%	6.0%	11.8%	77.0%	27
35.	Use word processing	31.6%	13.2%	8.8%	46.5%	16
36.	Other computer applications	5.9%	8.6%	7.5%	78.1%	171
37.	Accounting/bookkeeping	62.7%	19.1%	11.1%	7.1%	7
38.	Business English	81.4%	15.3%	2.3%	1.1%	4
39.	Business management	39.2%	36.4%	15.3%	9.1%	6
40.	Business mathematics	53.3%	30.1%	11.2%	5.4%	9
41.	English and communications	79.1%	17.5%	1.4%	2.0%	9

Table 6. (continued)

Item No.	Responsibility or Subject	Percentage Distribution				
		Very Important	Somewhat Important	Of Little Importance	Not Applicable	Missing Cases
42.	Math	61.1%	32.0%	5.4%	1.4%	8
43.	Science	15.9%	29.0%	35.1%	20.0%	13
44.	Humanities	33.4%	32.0%	23.3%	11.2%	11
45.	Social science	21.4%	34.2%	29.3%	15.1%	13
46.	Physical education	15.5%	24.1%	32.2%	28.2%	10
47.	Legal secretarial procedures	22.3%	24.9%	18.2%	34.7%	12
48.	Management of filing systems	65.2%	27.0%	5.5%	2.3%	10
49.	Medical secretarial procedures	17.6%	14.7%	10.6%	57.1%	18
50.	Office management	52.7%	32.0%	8.1%	7.2%	11
51.	Word processing concepts	38.6%	19.7%	11.3%	30.4%	13

In addition to those responsibilities listed as "not applicable," over 50% of the respondents indicated that the following responsibilities were "of little importance" or less. From highest to lowest percentage, they included: make travel arrangements, transcribe documents from machine dictation, use database software, and use word processing. Those subjects indicated by over 50% of the respondents to be "of little importance" or less were: physical education, science, and legal secretarial procedures.

Table 7 illustrates the percentage distribution of secretarial responsibilities and subjects by importance in businesses in 1997. Twenty of those responsibilites and subjects were considered "very important" by over 60% of those responding. From highest percentage to lowest percentage, the general and equipment-related responsibilities included: handle telephone duties, meet the public, type with accuracy, organize and prioritize work, organize and use a filing system, communicate ideas verbally, operate a word processor, handle mailing tasks, operate a copy machine, operate a calculator, use word processing, proofread and edit, and compose office correspondence and reports. From highest to lowest percentage, the subjects included: English and communications, business English, word processing concepts,

mangement of filing systems, accounting/bookkeeping, math, and office management.

An additional seven responsibilities and subjects were considered "very important" by between 50 and 60% of the respondents. From highest to lowest percentage the responsibilities included: use database software, operate an electronic typewriter, handle administrative responsibilities, requisition and maintain office supplies, operate an electric typewriter, and maintain equipment and software. The additional subject considered very important by over 50% of the respondents was business mathematics.

Over 50% of the respondents indicated that the following responsibilities and subjects were also at least "of some importance." From highest to lowest percentage, the responsibilities included: solve problems and make decisions, type with speed, use financial applications, research information, use spreadsheet software, use electronic mail, use electronic calendaring, select office equipment, arrange meetings and conferences, use graphics software, use other computer applications, and use voice mail. From highest to lowest percentage, the subjects included: business management, humanities, social science, and legal secretarial procedures.

One subject and one responsibility were indicated by over 50% of the respondents as "not applicable" in 1997.

Table 7. Percentage distribution of the importance of secretarial responsibilities and subjects in 1997

Item No.	Responsibility or Subject	Percentage Distribution: Very Important	Somewhat Important	Of Little Importance	Not Applicable	Missing Cases
1.	Arrange meetings and conferences	28.6%	34.8%	21.1%	15.5%	36
2.	Arrange electronic conferences	18.0%	26.4%	20.8%	34.8%	36
3.	Compose office correspondence and reports	60.9%	30.6%	6.1%	2.4%	31
4.	Communicate ideas verbally	70.6%	22.6%	5.0%	1.9%	35
5.	Handle administrative responsibilities	57.6%	30.8%	7.3%	4.3%	30
6.	Handle mailing tasks	67.3%	24.5%	6.4%	1.8%	28
7.	Handle telephone duties	87.6%	8.8%	2.7%	.9%	27
8.	Make travel arrangements	18.8%	24.4%	23.7%	33.1%	38
9.	Meet the public	84.1%	11.0%	3.4%	1.5%	31
10.	Organize and priortize work	79.0%	16.5%	3.4%	1.2%	30
11.	Organize and use a filing system	74.8%	17.3%	6.4%	1.5%	29
12.	Proofread and edit	61.5%	22.3%	10.7%	5.5%	31
13.	Requisition and maintain office supplies	56.5%	28.6%	11.9%	3.0%	29
14.	Research information	30.2%	41.0%	18.2%	10.5%	34
15.	Solve problems, make decisions	45.9%	41.6%	9.7%	2.8%	38
16.	Take and transcribe shorthand	8.1%	12.8%	28.7%	50.5%	37
17.	Use a micrographics filing system	21.0%	28.3%	13.4%	37.3%	44

Table 7. (continued)

Item No.	Responsibility or Subject	Percentage Distribution				
		Very Important	Somewhat Important	Of Little Importance	Not Applicable	Missing Cases
18.	Maintain equipment and software	52.2%	27.0%	7.8%	13.0%	36
19.	Operate a calculator	62.1%	20.5%	14.3%	3.1%	36
20.	Operate a copy machine	67.2%	21.6%	8.8%	2.4%	29
21.	Operate a word processor	69.7%	15.5%	4.6%	10.2%	35
22.	Operate an electric typewriter	55.0%	22.2%	14.3%	8.5%	29
23.	Operate an electronic typewriter	58.3%	19.1%	11.6%	11.0%	39
24.	Select office equipment	34.3%	33.0%	17.1%	15.6%	43
25.	Machine transcription	31.5%	18.0%	17.0%	33.4%	41
26.	Type with speed	43.5%	37.2%	14.2%	5.0%	41
27.	Type with accuracy	79.7%	15.0%	3.1%	2.2%	38
28.	Use database software	59.4%	21.9%	5.6%	13.1%	38
29.	Use electronic calendaring	37.6%	30.9%	10.2%	21.3%	44
30.	Use electronic mail	41.1%	27.6%	10.0%	21.3%	39
31.	Use financial applications	45.5%	27.7%	8.4%	18.4%	37
32.	Use graphics software	39.0%	24.4%	13.3%	23.2%	43
33.	Use spreadsheet software	46.2%	24.7%	9.4%	19.7%	38
34.	Use voice mail	30.8%	26.0%	13.0%	30.2%	50
35.	Use word processing	61.9%	20.1%	5.9%	12.1%	35
36.	Other computer applications	36.7%	23.5%	9.0%	30.7%	192
37.	Accounting/bookkeeping	63.3%	21.3%	10.2%	5.2%	34
38.	Business English	76.1%	18.7%	4.6%	.6%	31
39.	Business management	45.2%	37.2%	11.4%	6.2%	33
40.	Business mathematics	53.1%	34.2%	8.7%	4.0%	36
41.	English and communications	81.7%	15.2%	1.2%	1.9%	35
42.	Math	62.6%	30.5%	5.6%	1.2%	37
43.	Science	20.5%	28.7%	32.5%	18.3%	41

Table 7. (continued)

Item No.	Responsibility or Subject	Percentage Distribution				
		Very Important	Somewhat Important	Of Little Importance	Not Applicable	Missing Cases
44.	Humanities	35.1%	30.7%	22.9%	11.3%	39
45.	Social science	24.8%	31.8%	28.6%	14.8%	40
46.	Physical education	20.8%	21.4%	30.1%	27.6%	36
47.	Legal secretarial procedures	31.0%	25.0%	17.7%	26.3%	42
48.	Management of filing systems	64.0%	26.2%	7.7%	2.2%	33
49.	Medical secretarial procedures	20.3%	15.2%	9.5%	55.1%	42
50.	Office management	61.5%	28.6%	4.6%	5.2%	33
51.	Word processing concepts	67.4%	17.2%	6.3%	9.1%	39

They were medical secretarial procedures and taking and transcribing shorthand.

In addition to those responsibilities listed as "not applicable," over 50% of the respondents indicated that the following responsibilities and subjects were "of little importance" or less. From highest to lowest percentage, the responsibilities included: make travel arrangements, arrange electronic conferences, and use a micrographics filing system. The subjects, from highest to lowest percentage were physical education and science.

Hypotheses Testing

The results of Objective Number Two are presented here. Objective Number Two was to identify the differences of opinion between secretaries and supervisors with regard to responsibilities of secretaries in 1987 and 1997.

Hypothesis 1

There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1987 between secretaries and supervisors.

Secretaries and supervisors employed in businesses in Iowa Valley Community College District rated the level of importance of 51 secretarial responsibilities and subjects in 1987. Each responsibility or subject was rated as follows: 1 - Not Applicable; 2 - Of Little Importance; 3 -

Somewhat Important; and 4 - Very Important. The "mean" was the average rating of importance as indicated by respondents. To measure the data, a *t* test was applied to test at an .05 probability of error. The significant findings are shown in Table 8. Appendix H provides a detailed presentation of all findings from this test.

The results revealed that the rating of secretaries and supervisors differed significantly at an .05 probability of error on 5 of 51 secretarial responsibilities and subjects in 1987. The responsibilities rated significantly different by secretaries and supervisors included: handle mailing tasks; operate an electric typewriter; use electronic calendaring; and use other computer applications. The subject rated significantly different by secretaries and supervisors was office management. Secretaries felt that handling mail tasks and office management were more important than did supervisors. Supervisors felt that operating an electric typewriter, using electronic calendaring and using other computer applications were more important than did secretaries.

Hypothesis 1 was rejected at the .05 level on 5 out of 51 cases; it was not rejected at all at the .01 level of significance. Secretaries and supervisors differed on the importance of secretarial responsibilities and subjects in 1987 on only a minority of cases.

Table 8. Analysis of secretarial responsibilities by job title

Job title	Number	Mean	S. D.	T-value	2-tailed probablity*
Handle mailing tasks					
Secretary	168	3.7381	.539	2.54	.012
Supervisor	153	3.5686	.646		
Operate an electric typewriter					
Secretary	167	3.2695	1.095	-2.02	.044
Supervisor	155	3.4903	.856		
Use electronic calendaring					
Secretary	160	1.4937	.883	-2.17	.031
Supervisor	147	1.7279	.997		
Other computer applications					
Secretary	94	1.2660	.691	-2.21	.029
Supervisor	75	1.5600	.976		
Office management					
Secretary	162	3.4198	.825	2.15	.032
Supervisor	153	3.2092	.908		

*$p < .05$.

Hypothesis 2

There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1997 between secretaries and supervisors.

Secretaries and supervisors projected the level of importance of 51 secretarial responsibilities and subjects

in the year 1997. To measure the data, a t test was applied to test at an .05 probability of error. Appendix I provides a detailed presentation of all findings from this test.

The results revealed that the rating of secretaries and supervisors did not differ significantly at an .01 or .05 probability of error. Hypothesis 2 failed to be rejected. This indicates basically that secretaries and supervisors agreed on projected secretarial responsibilities in 1997.

Hypothesis 3

There is no significant difference in the role of the secretary in 1987 and the projected role of the secretary in 1997.

Secretaries and supervisors rated the importance of certain secretarial responsibilities and subjects in 1987. They also projected the importance of the same responsibilities and subjects in 1997. The ratings of the secretaries were combined with those of the supervisors for the purpose of identifying perceived differences in secretarial responsibilities between 1987 and 1997. Each responsibility or subject was rated as follows: 1 - Not Applicable; 2 - Of Little Importance; 3 - Somewhat Important; and 4 - Very Important. The "mean" was the

average rating of importance as indicated by all respondents. To measure the data, a t test was applied to test any significant difference in the ratings between 1987 and 1997. The significant findings are presented in Table 9. Appendix J provides a detailed presentation of all findings for this test.

The results revealed that the rating of responsibilities and subjects in 1987 differed significantly from the projected rating of the same responsibilities and subjects in 1997 on 33 of 51 cases. The probability of error was .01.

Four responsibilities were considered to be more important in 1987 than in 1997. They included: handle mailing tasks, organize and use a file system, operate a calculator, and operate an electric typewriter.

Twenty-nine responsibilities and subjects were projected to be more important in 1997 than in 1987. The responsibilities included: arrange meetings and conferences, arrange electronic conferences, handle administrative responsibilities, make travel arrangements, research information, use a micrographics filing system, maintain equipment and software, operate a word processor, operate an electronic typewriter, select office equipment, transcribe documents from machine dictation, type with speed, use database software, use electronic calendaring,

Table 9. Analysis of secretarial responsibilities and subjects in 1987 and 1997

Year	Number	Mean	S. D.	T-value	2-tailed probability*
Arrange meetings and conferences					
1987	321	2.6262	1.088	- 4.65	0.000
1997	321	2.7695	1.029		
Arrange electronic conferences					
1987	317	1.6498	.846	-11.67	0.000
1997	317	2.2618	1.116		
Handle administrative responsibilities					
1987	328	3.2744	.887	- 5.24	0.000
1997	328	3.4177	.805		
Handle mailing tasks					
1987	330	3.6667	.597	4.13	0.000
1997	330	3.5727	.695		
Make travel arrangements					
1987	319	2.0909	1.059	- 6.12	0.000
1997	319	2.2915	1.116		
Organize and use a filing system					
1987	328	3.7652	.504	3.97	0.000
1997	328	3.6555	.668		
Research information					
1987	323	2.6873	.951	- 6.26	0.000
1997	323	2.9102	.950		

*p < .01.

Table 9. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Use a micrographics filing system					
1987	310	1.4387	.777	-14.63	0.000
1997	310	2.3226	1.177		
Maintain equipment and software					
1987	321	2.6075	1.146	-10.71	0.000
1997	321	3.1900	1.039		
Operate a calculator					
1987	322	3.5404	.761	4.23	0.000
1997	322	3.4161	.847		
Operate a word processor					
1987	321	2.5826	1.287	-13.50	0.000
1997	321	3.4455	.980		
Operate an electric typewriter					
1987	329	3.3739	.983	2.68	0.008
1997	329	3.2371	.990		
Operate an electronic typewriter					
1987	318	2.7138	1.314	- 8.13	0.000
1997	318	3.2453	1.040		
Select office equipment					
1987	314	2.6433	1.081	- 6.73	0.000
1997	314	2.8567	1.058		

Table 9. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Transcribe documents from machine dictation					
1987	317	2.1451	1.257	- 6.03	0.000
1997	317	2.4763	1.247		
Type with speed					
1987	315	3.0762	.917	- 3.44	0.001
1997	315	3.1968	.855		
Use database software					
1987	316	2.2120	1.243	-16.45	0.000
1997	316	3.2690	1.054		
Use electronic calendaring					
1987	307	1.5993	.946	-18.72	0.000
1997	307	2.8274	1.149		
Use electronic mail					
1987	312	1.5801	.928	-19.50	0.000
1997	312	2.8654	1.168		
Use financial applications					
1987	313	1.9329	1.146	-16.27	0.000
1997	313	2.9872	1.138		
Use graphics software					
1987	307	1.6743	.959	-17.25	0.000
1997	307	2.7687	1.192		

Table 9. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Use spreadsheet software					
1987	313	1.9521	1.141	-15.57	0.000
1997	313	2.9585	1.166		
Use voice mail					
1987	301	1.3953	.816	-16.97	0.000
1997	301	2.5482	1.212		
Use word processing					
1987	317	2.3028	1.330	-14.88	0.000
1997	317	3.3123	1.037		
Other computer applications					
1987	156	1.4615	.897	-11.73	0.000
1997	156	2.5962	1.264		
Business management					
1987	324	3.0525	.938	-4.91	0.000
1997	324	3.2130	.877		
Science					
1987	315	2.3841	.978	-4.55	0.000
1997	315	2.5048	1.011		
Social science					
1987	315	2.5810	.982	-3.05	0.002
1997	315	2.6603	1.007		

Table 9. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Physical education					
1987	320	2.2281	1.021	-4.74	0.000
1997	320	2.3438	1.092		
Legal secretarial procedures					
1987	314	2.3662	1.162	-6.10	0.000
1997	314	2.6019	1.1779		
Medical secretarial procedures					
1987	312	1.9038	1.180	-3.43	0.001
1997	312	1.9840	1.223		
Office management					
1987	321	3.3053	.884	-5.56	0.000
1997	321	3.4579	.813		
Word processing concepts					
1987	317	2.6246	1.268	-12.61	0.000
1997	317	3.4259	.960		

use electronic mail, use financial computer applications, use graphics software, use spreadsheet software, use voice mail, use word processing, and use other computer applications. The subjects included: business management, science, social science, physical education, legal secretarial procedures, medical secretarial procedures, office management, and word processing concepts.

The results show that the rating of secretarial responsibilities and subjects in 1987 differed significantly from the projected ratings of secretarial responsibilities and subjects in 1997. The hypothesis was rejected at an .01 probability of error level 33 of 51 cases. This indicated that the role of the secretary may change significantly from 1987 to 1997.

Summary

Data were collected from secretaries and supervisors in businesses in the area served by Iowa Valley Community College District. They were asked to rate the importance of secretarial responsibilities and subjects in 1987 and project the importance of the same in 1997. All findings were presented in both narrative and tabular form. A detailed analysis of the data was presented in Appendices H, I, and J.

A fairly even number of secretaries and supervisors responded--168 secretaries and 156 supervisors. There were 34 categorized as "other". Of those responding, the majority, 181 or 50.6%, were from service industries. From 1 to 5 secretaries were employed in 303 or 93.5% of the businesses. The majority of those responding, 46.4%, indicated they felt that secretarial positions would change significantly over the next 10 years due to technology.

Thirty-nine percent indicated a moderate change in the secretarial position.

Responsibilities and subjects considered most important by secretaries and supervisors were determined through frequency distributions. Twenty-one responsibilities were considered to be "very important" in 1987 by over 50% of the respondents, while 27 responsibilities were considered to be "very important" in 1997 by over 50% of the respondents. This indicates an increase from 1987 to 1997 in the number of responsibilities and subjects considered to be "very important" for secretaries. Also, far fewer responsibilities were considered to be "not applicable" in 1997 than they were in 1987 by over 50% of the respondents. Eleven responsibilities were considered "not applicable" in 1987, while only two were considered "not applicable" in 1997 by over 50% of the respondents. Overall, responsibilities and subjects were rated with greater importance in 1997 than in 1987.

A t test of significance on independent samples was applied to the ratings of importance of secretarial responsibilities between secretaries and supervisors. For responsibilities in 1987, only 5 out of 51 cases differed significantly at an .05 probability of error level. Of the responsibilities projected for 1997, no ratings differed

significantly at the .05 probability of error level. This indicates that secretaries and supervisors basically agreed on the role of the secretary.

Finally, a *t* test on correlated samples was applied to the data to determine if the ratings of importance on secretarial responsibilities would change from 1987 to 1997. Results indicated that 33 out of 51 responsibilities differed significantly at an .01 probability of error level. Four responsibilities went from more important to less important; twenty-nine went from less important to more important. This indicates that the role of the secretary may change significantly from 1987 to 1997 in the area served by Iowa Valley Community College District.

CHAPTER 5. SUMMARY, CONCLUSIONS/DISCUSSION, AND RECOMMENDATIONS

This chapter summarized the study, "An analysis and projection of secretarial responsibilities in 1987 and 1997 in the area served by the Iowa Valley Community College District according to secretaries and supervisors." Conclusions were drawn from an analysis of the data collected followed by a discussion of the conclusions. Recommendations for further study were made based upon the summary and conclusions/discussion.

Summary

This study was designed to determine secretarial responsibilities both now and in the future in the area served by Iowa Valley Community College District. The information was based on the perceptions of secretaries and supervisors and was intended for use by educators in making decisions about curriculum content at the time of the study and in the future. The objectives of the study were:

1. To identify the responsibilities of the secretary in 1987 and 1997 in businesses in the area served by Iowa Valley Community College District.

2. To identify the differences of opinion between secretaries and supervisors with regard to responsibilities of secretaries in 1987 and 1997.

3. To determine how the role of the secretary will change from 1987 to 1997.

While the first objective of the study was purely descriptive, the second and third objective involved statistical testing of hypotheses. The hypotheses for objectives two and three were:

1. There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1987 between secretaries and supervisors.

2. There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1997 between secretaries and supervisors.

3. There is no significant difference in the role of the secretary in 1987 and the projected role of the secretary in 1997.

These hypotheses were generated from a review of selected literature on secretaries and education.

The review of selected literature presented in Chapter 2 encompassed three areas: (1) secretarial responsibilities, (2) the "office of the future", and (3) studies using an integrated approach to data collection. The review revealed that secretarial responsibilities are diverse and numerous; however, many common responsibilities were identified. The importance of the responsibilities varied by the date of the study and sample population.

The literature on the "office of the future" suggested that the use of electronic tools will force changes upon the traditional office. Some of the technologies forcing change included: artificial intelligence, information processing subsystems and electronic communications systems. These technologies, though major, will not eliminate the role of the secretary, but may enhance it (Smith et al., 1986).

Finally, selected studies on the integrated approach to data collection were reviewed. Dennee (1981), Moscove (1972), Roberts (1975), Sanders (1977), and Wagley (1975) found significant differences of opinion between secretaries or office workers and supervisors. Another study by Johnson (1978) indicated agreement among secretarial employees and employers on skills and competencies of secretaries.

The review of this literature guided the development of the procedures used in this study. The procedures for the study were outlined in Chapter 3. Five procedural steps included: (1) construction of the survey instrument; (2) validation and approval of the survey instrument; (3) compilation of the mailing list; (4) mailing of the survey instrument; and (5) treatment of the data.

The questionnaire was developed using significant secretarial responsibilities and subjects found through the

review of literature. The instrument was validated by 28 community college business education instructors in Iowa and a group of 20 secretarial students at Marshalltown Community College. The Human Subjects in Research Committee at Iowa State University approved the survey on June 8, 1987. The survey consisted of demographic data and ratings of importance on secretarial responsibilities and subjects in 1987 and 1997.

The mailing list consisted of a 10 percent random sample compiled from the "yellow pages" of telephone directories from the six largest towns in District VI. A total of 864 businesses was included in the sample. Surveys and letters of introduction were sent to the secretary and supervisor in each business. Of the two surveys sent to each of the 864 businesses, secretaries returned 168 or 19.4% and supervisors 156 or 18%. Thirty-four were classified as "other." From the total of 363 surveys returned, 358 or 20.7% were usable. The data were coded manually and tabulated through the use of a computer. Descriptive statistics were used to analyze the data collected. The data collected were presented in both tabular and narrative form in Chapter 4. A detailed analysis of the data is presented in the appendices.

Of those responding, the majority were employed in service industries. Trade, government, manufacturing, and

other industries were also represented. Ninety-two percent of the businesses employed from 1 - 5 secretaries only. Most of the respondents indicated they felt the secretarial position would change significantly over the next 10 years.

Frequency distributions and t tests were applied to the data in order to determine common secretarial responsibilities, differences of opinion between secretaries and supervisors on responsibilities, and the projected role change of the secretary from 1987 to 1997.

Twenty-one responsibilities were considered to be "very important" in 1987 by over 80% of the respondents; 27 responsibilities were considered to be "very important" in 1997 by over 50% of the respondents. This indicated an increase in the number of responsibilities and subjects considered to be "very important" for secretaries.

Far fewer responsibilities and subjects were considered "not applicable" in 1997 than they were in 1987 by over 50% of the respondents. Eleven responsibilities were considered "not applicable" in 1987, while only two were considered "not applicable" in 1997 by over 50% of the respondents. Overall, responsibilities and subjects were rated with greater importance in 1997 than in 1987.

Research hypothesis 1, "There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1987 between secretaries

and supervisors," was rejected 5 out of 51 cases. In the majority of cases, secretaries and supervisors agreed on the rating of secretarial responsibilities and subjects. The five cases rated significantly different evidenced no apparent correlation.

Research hypothesis 2, "There is no significant difference in the rating of importance of secretarial responsibilities and subjects in 1997 between secretaries and supervisors," was confirmed in all cases at .05 and .01 probability of error levels. This indicates that secretaries and supervisors basically agreed on the role of the secretary.

Research hypothesis 3, "There is no significant difference in the role of the secretary in 1987 and the projected role of the secretary in 1997," was rejected 33 out of 51 cases. Four responsibilities went from more important to less important; twenty-nine went from less important to more important. This indicated that the role of the secretary may change significantly from 1987 to 1997 in area of Iowa Valley Community College District.

Conclusions/Discussion

The following conclusions were drawn based on the findings of the study.

1. The response rate of secretaries and supervisors was fairly even in distribution. An objective of the

study (discussed later) was to determine the differences of opinion between secretaries and supervisors. It may be concluded that the opinions drawn in the study were equally representative of both secretaries and supervisors.

2. Of those responding, 93.5% worked in businesses employing from one to five secretaries. It may be concluded that most businesses in the area of Iowa Valley Community College District are small businesses. Nonetheless, the findings of this study were characteristic of businesses employing from one to five secretaries. This characteristic makes the study unique because it represents primarily small businesses. The population used in other studies differed from the population used in this study. For example, Matthews (1975) and Wagoner (1967) surveyed businesses on a statewide scale. Perkins, Byrd, and Roley (1968) surveyed businesses in five office size categories on a statewide scale as well. Gray (1972) gathered information from 50 businesses in 11 southern states. Kusek (1974) collected data in a metropolitan area of Massachusetts. The findings of this study, therefore, may be more specific to small businesses in sparsely populated areas of the country.

3. The type of business the respondents were employed in was primarily service-related industries (50.6%). As mentioned previously, trade industries are more abundant

and employ more people than any other industry in the four-county area served by Iowa Valley Community College District; however, it may be concluded that more secretaries are employed in service-type industries. It may also be concluded that because of the source of the mailing list, which was the "yellow pages" of the telephone directories, service industries were proportionately over-represented compared to the distribution of types of businesses in the area. (Service industries would more likely advertise in the yellow pages than other types of industries.) Regardless, it was a characteristic of this study that service industries were represented in the majority.

4. The majority of respondents indicated they believed secretarial responsibilities would change significantly in the next 10 years. This is confirmed in their ratings of importance of responsibilities and subjects from 1987 to 1997. The findings of the study suggested a significant change in secretarial responsibilities through 1997.

Other futuristic studies reviewed also indicated upcoming changes in secretarial responsibilities. In 1977, O'Sullivan (1977) predicted, from findings of her study, the importance of word processing systems in offices in 1984. Hobson (1982) predicted, from the results of his

study, an expansion of word processing and the emergence and integration of other technologies. And finally, Fusselman (1986) concluded that secretarial jobs would change due to automation but would not be lost because the personal relationships that are a part of the secretary's job are not amenable to automation.

Secretarial jobs are constantly changing due to automation and new technologies. As this study and the previously cited studies suggested, change is a continual facet of the secretarial job and ongoing research is recommended.

5. The ratings of the importance of secretarial responsibilities in 1987 revealed that 21 responsibilities and subjects were considered "very important" by over 50% of those responding. The 21 responsibilities and subjects were traditional office responsibilities.

Those responsibilities and subjects indicated as "not applicable" in 1987 by over 50% of the respondents were primarily new responsibilities evolving from technological developments. Only two items indicated as "not applicable" in 1987 were traditional secretarial duties-- "take and transcribe shorthand" and "medical secretarial procedures." It may be concluded that "traditional" secretarial responsibilities continue to be of significant importance in the business world. It may also be concluded that

businesses in the area served by Iowa Valley Community College District have not yet made the adaptation to a technologically-oriented office environment.

This study, as well as numerous other studies, have found "traditional" secretarial skills to be of continued importance. Some of the studies reviewed in the literature which found "traditional" secretarial responsibilities of importance include: Blanchard, (1974); Dennee (1981); Ellis (1981); Erickson (1971); Gray (1972); Johnson (1978); Kusek (1974); Perkins, Byrd, and Roley (1968); Powell (1975); and Whelan (1975).

6. The ratings of importance of secretarial responsibilities projected for 1997 revealed a greater number of responsibilities considered to be "very important" by over 50% of the respondents. The same 21 "traditional" responsibilities considered to be "very important" in 1987 were projected to be "very important" again in 1997.

In addition to those 21 "traditional" responsibilities, 7 more were projected to be "very important" in 1997. In order of importance, the additional responsibilities included: operate a word processor, word processing concepts, use word processing computer applications, use database software, operate an electronic typewriter, and maintain equipment and software. It may be

concluded that in addition to the "traditional" secretarial responsibilities, an emphasis on computer applications, especially word processing, may be recognized in businesses in 1997.

Both Fusselman (1986) and the article "Secretaries and Automation" reviewed in this study indicated an increase in computer-related responsibilities for the secretary in the future. Personal characteristics were also considered to be of major importance to the future secretarial job in both studies. Again, the traditional skills were recognized as important by numerous studies in the past and, according to the results of this study, will be important in the future as well. However, computer-related skills are also becoming an important aspect of the secretarial job.

The responsibilities projected as "not applicable" by over 50% of the respondents in 1997 were "medical secretarial procedures" and "taking and transcribing shorthand." Since "medical secretarial procedures" is applicable only to medical offices, the responsibility is most likely noted only because a minority of medical offices were represented in the study.

7. It may be concluded that shorthand is not used by secretaries in the majority of businesses represented in

this study. Projections also indicated shorthand will be of little importance in 1997 as well.

The importance of shorthand has been a controversial issue among office education professionals for sometime. Studies supporting the importance of shorthand as a secretarial skill included: Blanchard (1974); Ellis (1981); Erickson (1971); Gray (1972); Johnson (1978); Moody (1978); and Murranka (1979). Other studies have minimized the importance of shorthand in a secretarial curriculum. They included: Dennee (1981); Kusek (1974); Perkins, Byrd, and Roley (1968); and "Secretaries and Automation" (1986).

The deemphasis on shorthand as suggested from the results of this study may indicate a move toward automation and less personalization in the office. It may also indicate that alternative methods of recording dictation may be more cost effective and efficient. The need for secretaries to possess shorthand abilities continues to be a controversial issue in office education channels. Nevertheless, the use of shorthand in offices is declining.

8. The ratings of the importance of secretarial responsibility and subjects in 1987 between secretaries and supervisors indicated agreement on 46 of the 51 cases. The five cases rated significantly different included: responsibilities--handle mailing tasks, operate an electric typewriter, use electronic calendaring, use other computer

applications; and subject--office management. There was no apparent reason or conclusion that could be drawn from the differences of opinion on the five cases.

The ratings of importance of secretarial responsibilities and subjects projected for 1997 between secretaries and supervisors indicated agreement on all cases. It may, therefore, be concluded that secretaries and supervisors agree on the importance of secretarial responsibilities and subjects.

The use of an integrated survey in this study enhanced the understanding of the findings and makes the data more reliable. The two groups surveyed were in agreement on the importance of the majority of the responsibilities of the secretary. It may be concluded, therefore, that the data are more reliable than if just one group had been surveyed.

In surveying office workers and their managers, Moscove (1972) also found similarities in opinions of the duties involved in office work and present and future trends for office workers. Moscove did find differences of opinion among the office workers and managers on other topics. Many studies using an integrated approach to data collection found differences and similarities in opinions on varying topics (Dennee, 1981; Johnson, 1978; Roberts, 1975; Sanders, 1977; and Wagley, 1975). Although none specifically addressed the importance of secretarial

responsibilities, all studies revealed the importance of the integrated approach to data collection.

9. Secretaries and supervisors basically agreed on the role of the secretary in the office in 1987 and 1997. Because of this, both secretaries and supervisors may make competent secretarial advisory committee members.

10. Projections on the role change of the secretary from 1987 to 1997 were analyzed. The rating of responsibilities and subjects in 1987 differed significantly from the projected rating of the same responsibilities and subjects in 1997 on 33 of 51 cases. Only four of the responsibilities were considered to become less important with time passage. They included the following "traditional" responsibilities: handle mail tasks, organize and use a file system, operate a calculator, and operate an electric typewriter.

Twenty-nine responsibilities and subjects projected to be more important in 1997 than they are in 1987 included: responsibilities--arrange meetings and conferences, arrange electronic conferences, handle administrative responsibilities, make travel arrangements, research information, use a micrographics filing system, maintain equipment and software, operate a word processor, operate an electronic typewriter, select office equipment, transcribe documents for machine dictation, type with

speed, use database software, use electronic calendaring, use electronic mail, use financial computer applications, use graphics software, use spreadsheet software, use voice mail, use word processing, and use other computer applications; subjects--business management, science, social science, physical education, legal secretarial procedures, medical secretarial procedures, office management, and word processing concepts.

It may be concluded that the secretary's role will change and will entail more responsibility because there were more responsibilities considered important in 1997 than in 1987. More knowledge and use of various computer applications may be expected of the secretary. An even broader role of the secretary in the office may substantiate the need to separate secretarial functions into more specifically-defined job categories.

Recommendations

Based on the findings of this study, the research recommends that:

1. This study may be useful to business educators at Marshalltown Community College in Marshalltown, Iowa, and Ellsworth Community College in Iowa Falls, Iowa. The population of the study consisted of businesses in the areas served by these two community colleges. Secretarial

programs and perhaps other business programs could be reviewed and modified through the use of the results of this study.

Community colleges throughout the state of Iowa have similar secretarial programs and may also benefit from a review of the results of the study. The results may be used to justify the need for advisory committees and to help committee members understand their role.

Employers may benefit by reading the results of the study to determine whether or not they are keeping pace with developments, technological and otherwise, in the secretarial field. They may also realize the importance of their input in the determination of appropriate secretarial curriculums.

2. A 10-year plan, in correlation with this study, could be developed by business educators, outlining the gradual implementation of changes in the curriculum. Responsibilities and subjects considered important in 1987 in this study could be reviewed and the curriculum could be modified as necessary. Responsibilities and subjects projected as important in 1997 could be implemented gradually and could be in place by 1997.

3. Due to the revolution taking place in offices, business educators, employers, and employees should be

prepared to accept rapidly developing changes, technological and otherwise, in the office.

4. More research will need to be completed in the future in order to continue to develop and plan curriculum one step ahead of time. A replication of this study would be beneficial in five or more years.

5. Secretarial curriculums should be reviewed to determine appropriate content. Many traditional secretarial skills continue to be important; however, in the near future, technological advancements will place greater demands on the training of secretaries. The time allotted to training will not likely expand; therefore, a careful analysis of the time that should be allocated to the teaching of each responsibility and subject needs to be completed. The importance of each responsibility and subject is given in this study; however, further research on the time allotted, in a secretarial curriculum, to the teaching of each responsibility and subject would be beneficial.

6. As was indicated in Chapter 1, Murphree (1985) defined the secretarial position as a diverse one--the "secretary's" position tends to be a "catchall category" for any office worker who performs a variety of tasks that support the work of someone else. With more and more responsibilities considered important, as indicated in this

study, the secretarial position will be forced to define itself more clearly. Secretarial levels could be defined to help identify the capabilities or level of training of a particular position. Further study, therefore, on the order in which the responsibilities of the secretary should be taught is recommended.

7. The study is primarily descriptive of an area in which businesses employ from only one to five secretaries and, therefore, may not be deemed appropriate for use in areas where secretaries are employed by large numbers in businesses. In this case, a similar study could be completed with a representative population.

8. This study is largely descriptive of service-related employers and, therefore, may not be deemed appropriate for use in areas where other industries are predominant. In this case, a similar study could be completed with a representative population.

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APPENDIX A. REVIEW OF LITERATURE--SUMMARY OF FINDINGS

Table A-1. Data

Author/Year	Summary of Findings
Wagoner/1967	Secretary performed two types of duties--clerical duties assisting the executive and secretarial duties for which the secretary is primarily responsible; increase in emphasis on written communication and decrease in emphasis on office management and accounting.
Perkins, Byrd and Roley/1968	These 13 tasks consumed only a portion of the office worker's time and other tasks varied depending on the worker's job classification: typewriting, office machines and equipment, dictating and transcribing, mailing, filing, telephoning and communicating, clerical, securing data, mathematics, financial and record keeping, editorial, meeting and working with people, and miscellaneous.
Erickson/1971	Ranked the components of office work; communicating with others--90%; sorting, filing and retrieving--71%; typewriting--49%; checking, computing and verifying--47%; collecting and distributing--21%; operating business machines--18%; operating automatic data processing equipment--14%; taking dictation--10%; supervising, planning, and training--3%; and analyzing procedures and flow charting--3%.
Gray/1972	Duties performed by beginning secretaries in over 50% of the companies were: receiving callers; using the telephone; handling outgoing and incoming mail; typing documents; taking dictation in shorthand and transcribing; composing letters; filing transcription from a dictating machine; ordering supplies; arranging meetings; making travel arrangements; preparing office reports; scheduling calendars; duplicating; and calculating. Also, the most important characteristics of a secretary were found to be:

Table A-1. (continued)

Author/Year	Summary of Findings
	accuracy, dependability, good judgment, initiative and neat appearance. Emphasis on grammar, spelling, typewriting and shorthand was recommended.
Blanchard/1974	The following units were important to a secretarial curriculum: typewriting, shorthand, transcription, business letter writing; business math, filing, calculating and duplicating, introduction of business and management; and secretarial practice. Students should also be introduced to data processing and computer terminology and functions.
Kusek/1974	Competencies for word processing and traditional secretarial personnel did not differ significantly. Eleven of thirteen competencies were important for both groups: applying language skills, typewriting, proofreading, listening, and following verbal instructions, planning the placement of material to be typed, reading and following written instructions, knowing the office procedures followed in a company, recognizing acceptable finished work, establishing work priorities, working as a team with others, and editing material during transcription or typing.
Matthews/1975	Secretarial curriculum should include: increased emphasis on typewriting with both speed and accuracy; decreased emphasis on duplication processes with alternative emphasis on using the appropriate duplication process; teaching the concept of magnetic keyboarding and not actual machine operation due to high cost and obsolescence factors; continued emphasis on both speed and accuracy in shorthand and machine transcription; continued emphasis on alphabetic, numeric, and subject filing but not geographic filing; teaching the concepts of work flow, development of communication and human relations skills.

Table A-1. (continued)

Author/Year	Summary of Findings
Powell/1975	Indicated a need for preparing secretarial students for changing conditions and procedures including information on word processing concepts. Training on magnetic media typewriter was not considered essential. Basic secretarial skills important to the secretarial curriculum included: grammar, spelling, proper attitude toward work, and ability to get along with others.
Whelan/1975	Personal traits are more important than secretarial duties according to practicing secretaries, secretarial duties are more important than personal traits according to prospective secretaries; the ability to follow directions is very important; loyalty to the employer is important; modesty is relatively unimportant; punctuality is less important to the oldest group; finding practical solutions to problems is more important to the older group than others; office housekeeping duties do not contribute to success, and attendance at professional meetings is relatively nonimportant to professional success.
Johnson/1978	Necessary secretarial skills and competencies included: typewriting, shorthand, transcription, business letter writing, filing, secretarial procedures, and duplicating machine operations. Secretarial duties not important included: secretarial accounting, business math, office calculations, and machine transcription.
Moody/1978	Recommendations important to office occupations curricula: word processing training of both equipment and concepts, typewriting documents with both speed and accuracy; machine transcription of both longhand and recorded dictation;

Table A-1. (continued)

Author/Year	Summary of Findings
	typewriting on correcting selectrics and memory typewriters; shorthand; composition and dictation of correspondence; and grammar.
Murranka/1979	Correspondence secretaries, administrative secretaries and supervisors in word processing installations all needed typing and machine transcription skills; administrative secretaries needed secretarial training which included shorthand, composition, decision-making skills, interpersonal communication skills, and copy machine use; correspondence secretaries were trained on the job.
Dennee/1981	Found competencies important to both the correspondence and administrative secretarial positions including: writing mechanics, proofreading, editing, transcribing, revising, composing, planning, organizing, decision-making, managing time, working under pressure, accepting constructive suggestions, demonstrating initiative, assisting with overflow work, demonstrating problem solving, working with interruptions, and logging documents. Personal improvement skills that were important included: attitude, cooperativeness, loyalty, integrity, punctuality, initiative, and dependability. Equipment-related skills were unimportant for the correspondence secretary only. Skills considered unimportant for the correspondence secretary were: taking shorthand notes, arranging meetings, preparing itineraries, scheduling appointments, interpreting financial reports and dictating office correspondence.
Ellis/1981	Competencies that should be a part of a secretarial curriculum included: shorthand, dictating/transcription skills, perception skills, problem solving and decision-

Table A-1. (continued)

Author/Year	Summary of Findings
	making skills, interpersonal relations, and word processing. Most businesses had word processing equipment; however, the electric typewriter was the machine used more than any other machine in the office.
Secretaries and Automation/1986	Important responsibilities included: interpersonal skills, responsibility, loyalty, dedication, initiative and enthusiasm. Traditional secretarial job was changing--being replaced by paraprofessional jobs. Now responsibilities might include: monitoring the organization of work, maintaining the equipment and software, seeking new applications, negotiating with suppliers and users, and instructing and serving users.

APPENDIX B. SURVEY INSTRUMENT

CHECKLIST OF SECRETARIAL RESPONSIBILITIES

Directions: This survey has been designed for ease of completion. Please check your response(s) to each numbered item.

1. What is your job title?

Secretary _____
Supervisor of secretary _____
Other, please specify _____

2. Number of secretaries employed in business?

1 - 5 secretaries ____
6 - 25 secretaries ____
26 or more secretaries ____
Approximate number ____

3. What is the type of business in which you are employed?

Trade ____ Manufacturing ____ Other, specify _____
Government ____ Service ____

4. How will technology affect secretarial responsibilities in 10 years?

____ No change
____ Slight change
____ Moderate change
____ Significant change
____ Secretarial positions will not exist. (Please explain.)

PLEASE CHECK THE IMPORTANCE OF THE RESPONSIBILITIES AND SUBJECTS NEEDED BY SECRETARIES IN YOUR OFFICE NOW AND THOSE THAT YOU PREDICT WILL BE NEEDED IN 10 YEARS.

(VI)Very Important (SI)Somewhat Important (OLI)Of Little Importance (NA)Not Applicable

	Importance Today				X	Importance In 10 Years			
	VI	SI	OLI	NA	X	VI	SI	OLI	NA
GENERAL RESPONSIBILITIES					X				
5. arrange meetings/conferences . . 5.					X				
6. arrange electronic conferences . 6.					X				
7. compose office correspondence and reports . . . . . 7.					X				
8. communicate ideas verbally . . . 8.					X				
9. handle administrative responsibilities . . . . . 9.					X				
10. handle mailing tasks . . . . . 10.					X				
11. handle telephone duties . . . . . 11.					X				
12. make travel arrangements . . . . 12.					X				
13. meet the public . . . . . 13.					X				
14. organize and prioritize work . . 14.					X				
15. organize and use a filing system 15.					X				
16. proofread/edit . . . . . 16.					X				
17. requisition and maintain office supplies . . . . . 17.					X				
18. research information . . . . . 18.					X				
19. solve problems, make decisions . 19.					X				
20. take and transcribe shorthand . . 20.					X				
21. use a micrographics filing system 21.					X				
EQUIPMENT-RELATED RESPONSIBILITIES					X				
22. maintain equipment and software . 22.					X				
23. operate a calculator 23.					X				

CHECKLIST OF SECRETARIAL RESPONSIBILITIES

(VI)Very Important (SI)Somewhat Important (OLI)Of Little Importance (NA)Not Applicable

	Importance Today				X	Importance In 10 Years			
	VI	SI	OLI	NA	X	VI	SI	OLI	NA
24. operate a copy machine . . . . . 24.					X				
25. operate a word processor . . . . 25.					X				
26. operate an electric typewriter . 26.					X				
27. operate an electronic typewriter 27.					X				
28. select office equipment . . . . . 28.					X				
29. transcribe documents from machine dictation . . . . . 29.					X X				
30. type with speed . . . . . 30.					X				
31. type with accuracy . . . . . 31.					X				
32. use the following computer applications:					X X				
a. database software . . . . . 32.					X				
b. electronic calendaring . . . 32.					X				
c. electronic mail . . . . . 32.					X				
d. financial applications . . . 32.					X				
e. graphics software . . . . . 32.					X				
f. spreadsheet . . . . . 32.					X				
g. voice mail . . . . . 32.					X				
h. word processing . . . . . 32.					X				
i. other . . . . . 32.					X				
SUBJECTS					X				
33. accounting/bookkeeping . . . . . 33.					X				
34. business English (spelling, punctuation, capitalization, and word division . . . . . 34.					X X X				
35. business management . . . . . 35.					X				
36. business mathematics . . . . . 36.					X				
37. general education courses					X				
a. English/communications . . . 37.					X				
b. math . . . . . 37.					X				
c. science . . . . . 37.					X				
d. humanities . . . . . 37.					X				
e. social science . . . . . 37.					X				
f. physical education . . . . . 37.					X				
38. legal secretarial procedures . . 38.					X				
39. management of filing systems . . 39.					X				
40. medical secretarial procedures . 40.					X				
41. office management . . . . . 41.					X				
42. word processing concepts . . . . 42.					X				

43. List any other skills or subjects you feel are important to the secretary's job:

Thank you for taking time to complete the survey. It has been stamped and pre-addressed for ease of return. Please fold into thirds, staple, and drop in the mail.

Brenda Woodward

APPENDIX C. LIST OF COMMUNITY COLLEGE INSTRUCTORS PARTICIPATING IN SURVEY VALIDATION

COMMUNITY COLLEGE BUSINESS EDUCATION TEACHERS PARTICIPATING IN SURVEY VALIDATION PROCESS

Instructor	Community College
Amoroso, Bev	Kirkwood Community College
Asadi, Murlene	Scott Community College
Converse, Vicky J.	Hawkeye Institute of Technology
Cook, Juanita D.	Western Iowa Tech Community College
Duis, Mary Jane	Iowa Western Community College
Fancher, Jane	Iowa Western Community College
Foutch, Carolyn	Iowa Western Community College
Hanson, Mary	Western Iowa Tech Community College
Howarth, Lucy	Iowa Western Community College
Hunt, Colleen	Iowa Western Community College
Jacobson, Donna R.	Northwest Iowa Technical College
Jones, Deb	Iowa Lakes Community College
McDonald, Sandy	Hawkeye Institute of Technology
Ohlendorf, Carolyn	Muscatine Community College
Peleck, Michele	Marshalltown Community College
Pierson, Bob	Iowa Central Community College
Poli, Linda	Indian Hills Community College
Price, Marilyn	Kirkwood Community College
Raab, Shirley Dr.	Western Iowa Tech Community College
Roberts, Joy	Western Iowa Tech Community College
Robertson, Joan	Iowa Central Community College
Schmitz, Connie	Indian Hills Community College

Sindt, Beth	Hawkeye Institute of Technology
Van Buskirk, Peg	Ellsworth Community College
Walker, Sandy	Clinton Community College
Wild, Linda	Iowa Western Community College
Winegar, Jo Ellen	Scott Community College
Wyrick, Sue	Kirkwood Community College

APPENDIX D. LETTER SENT TO COMMUNITY COLLEGE INSTRUCTORS

Marshalltown Community College
Iowa Valley Community College District
3700 S. Center St.
Marshalltown, IA 50158
(515) 752-7106

April 23, 1987

Dear Secretarial Instructor:

Thank you for agreeing to critique the survey I will be using to research the secretary's role in the office. The survey is enclosed. Please read over it and note any comments you have on the first page.

For your information, the purpose of my study is to identify the competencies needed by secretaries at the time of the study and in ten years. Another purpose is to identify what office technology is used by secretaries at the time of the study and what they predict will be used in ten years. The information will be collected through the use of the enclosed survey. Secretaries and their supervisors will be surveyed. The results of the study are intended for use by educators in making decisions about secretarial curriculum content now and in the future.

If you can, please attend the telenet session on Wednesday, April 29, at 3:30 p.m. Please contact your campus telenet coordinator to confirm the location and to let him or her know you will be attending. The telenet system has been reserved for that time.

If you cannot attend the telenet session, please return the survey in the postage-paid envelope enclosed. Your time and effort are greatly appreciated.

Sincerely,

Brenda Woodward

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Enclosure

APPENDIX E. LETTER INTRODUCING SURVEY TO SUPERVISOR

Marshalltown Community College
Iowa Valley Community College District
3700 S. Center St.
Marshalltown, IA 50158
(515) 752-7106

June 9, 1987

Supervisor:

I need your help and the help of your secretary. I am conducting a research study to determine secretarial responsibilities in offices today and in 10 years. The information gathered will be used in modifying the secretarial curriculum at Marshalltown Community College in the coming decade.

You were selected from a random sample of residents in area served by Marshalltown Community College. If you supervise a secretary, please complete the attached checklist and ask your secretary to complete the other checklist enclosed. If you do not supervise a secretary, please give these documents to someone in your office who does. For the purpose of this study, a secretary is defined as a person employed to carry out minor administrative and general office duties, including document preparation.

After completing the enclosed checklist, please fold it into thirds, staple, and drop it in the mail by June 23. The checklists are pre-addressed and pre-stamped for your convenience in returning them. In order to get an accurate assessment of businesses in this area, it is very important that you answer each question and return the checklist by June 23. Your input will be most helpful.

The information you provide will be kept confidential. The identification number written on the lower right corner of the checklist is simply to let me know you have returned the survey. When it is returned, the identification codes will be destroyed. The results will only be used for this survey.

Please help me make this research successful. Thank you very much.

Sincerely,

Brenda Woodward

Brenda Woodward, Coordinator
Professional Office Institute

Enclosures

APPENDIX F. LETTER INTRODUCING SURVEY TO SECRETARY

Marshalltown Community College
Iowa Valley Community College District
3700 S. Center St.
Marshalltown, IA 50158
(515) 752-7106

June 9, 1987

Secretary:

I need your help. I am conducting a research study to determine secretarial responsibilities in offices today and in 10 years. The information gathered will be used in modifying the secretarial curriculum at Marshalltown Community College in the coming decade.

You were selected from a random sample of residents in the area served by Marshalltown Community College. For the purpose of this study, a secretary is defined as a person employed to carry out minor administrative and general office duties, including document preparation.

If you fill this role, please complete the enclosed checklist, fold it into thirds, staple, and drop it in the mail by June 23. It is pre-addressed and pre-stamped. In order to get an accurate assessment of businesses in this area, it is very important that you answer each question and return the checklist by June 23. Your input will be most helpful.

The information you provide will be kept confidential. The identification number written on the lower right corner of the checklist is simply to let me know you have returned the survey. When it is returned, the identification codes will be destroyed. The results will only be used for the survey.

Please help me make this research successful. Thank you very much.

Sincerely,

Brenda Woodward

Brenda Woodward, Coordinator
Professional Office Institute

Enclosure

APPENDIX G. FOLLOW-UP LETTERS TO SURVEY PARTICIPANTS

Marshalltown Community College

Iowa Valley Community College District

3700 S. Center St.
Marshalltown, IA 50158
(515) 752-7106

June 23, 1987

Supervisor:

I need your help in learning more about the secretary's role in the office. The information I hope to obtain will be used in modifying the secretarial curriculum at Marshalltown Community College in the coming decade.

Two weeks ago you were sent a pair of checklists to be completed by you and your secretary or another supervisor/secretary pair whom you selected. If you have not already done so, please take a little time now to complete the checklist and ask your secretary to complete the other checklist enclosed. Return them to me by July 7. A duplicate set of checklists is enclosed in case you misplaced the first set. If you are unable to complete them at this time, please pass them on to another supervisor/secretary pair in your office. For the purpose of this study, a secretary is defined as a person employed to carry out minor administrative and general office duties, including document preparation.

After completing the enclosed checklists, please fold them into thirds, staple, and drop in the mail by July 7. In order to get an accurate assessment of businesses in this area, it is very important that you answer each question and return the checklists by July 7. Your input will be most helpful.

The information you provide will be kept confidential. The identification number written on the lower right corner of the checklists is simply to let me know you have returned the survey. When it is returned, the identification codes will be destroyed. The results will only be used for this survey.

Please take time now to make sure your business and your industry are represented. The checklists are pre-addressed and pre-stamped for your convenience in returning them.

Sincerely,

Brenda Woodward

Brenda Woodward, Coordinator
Professional Office Institute

Enclosures

Marshalltown Community College
Iowa Valley Community College District
3700 S. Center St.
Marshalltown, IA 50158
(515) 752-7106

June 23, 1987

Supervisor:

I need your help in learning more about the secretary's role in the office. The information I hope to obtain will be used in modifying the secretarial curriculum at Marshalltown Community College in the coming decade.

Two weeks ago you were sent a pair of checklists to be completed by you and your secretary or another supervisor/secretary pair whom you selected. The supervisor's checklist has not been returned. If you have not already done so, please take a little time now to complete the checklist enclosed and return it by July 7. A duplicate checklist is enclosed in case you misplaced the first one. If you are unable to complete it this time, please pass it on to another supervisor in your office. For the purpose of this study, a secretary is defined as a person employed to carry out minor administrative and general office duties, including document preparation; and a supervisor is defined as a person who supervises a secretary.

After completing the enclosed checklist, please fold them into thirds, staple, and drop in the mail by July 7. In order to get an accurate assessment of businesses in this area, it is very important that you answer each question and return the checklist by July 7. Your input will be most helpful.

The information you provide will be kept confidential. The identification number written on the lower right corner of the checklist is simply to let me know you have returned the survey. When it is returned, the identification codes will be destroyed. The results will only be used for this survey.

Please take time now to make sure your business and your industry are represented. The checklist is pre-addressed and pre-stamped for your convenience in returning it.

Sincerely,

Brenda Woodward

Brenda Woodward, Coordinator
Professional Office Institute

Enclosure

Marshalltown Community College
Iowa Valley Community College District
3700 S. Center St.
Marshalltown, IA 50158
(515) 752-7106

June 23, 1987

Supervisor:

I need your help in learning more about the secretary's role in the office. The information I hope to obtain will be used in modifying the secretarial curriculum at Marshalltown Community College in the coming decade.

Two weeks ago you were sent a pair of checklists to be completed by you and your secretary or another supervisor/secretary pair whom you selected. The supervisor's checklist was returned, however, the secretary's checklist has not yet been received. If the secretary in your office has not already done so, please ask him or her to complete the checklist enclosed and return it by July 7. A duplicate checklist is enclosed in case the first one was misplaced. For the purpose of this study, a secretary is defined as a person employed to carry out minor administrative and general office duties, including document preparation.

After completing the enclosed checklist, please fold them into thirds, staple, and drop in the mail by July 7. In order to get an accurate assessment of businesses in this area, it is very important that you answer each question and return the checklist by July 7. Your input will be most helpful.

The information you provide will be kept confidential. The identification number written on the lower right corner of the checklist is simply to let me know you have returned the survey. When it is returned, the identification codes will be destroyed. The results will only be used for this survey.

Please take time now to make sure your business and your industry are represented. The checklist is pre-addressed and pre-stamped for your convenience in returning it.

Sincerely,

Brenda Woodward

Brenda Woodward, Coordinator
Professional Office Institute

Enclosure

APPENDIX H. COMPARISON OF SECRETARIES AND SUPERVISORS ON IMPORTANCE OF SECRETARIAL RESPONSIBILITIES AND SUBJECTS IN 1987

Table H-1. Data

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Arrange meetings and conferences					
Secretary	165	2.6788	1.110	.41	.684
Supervisor	151	2.6291	1.056		
Arrange electronic conferences					
Secretary	160	1.5625	.844	-1.91	.057
Supervisor	150	1.7467	.853		
Compose office correspondence					
Secretary	165	3.4848	.754	.61	.541
Supervisor	153	3.4314	.801		
Communicate ideas verbally					
Secretary	163	3.5767	.675	-.93	.352
Supervisor	149	3.5443	.605		
Handle administrative responsibilities					
Secretary	167	3.2216	.934	-.93	.351
Supervisor	153	3.3137	.831		
Handle mailing tasks					
Secretary	168	3.7381	.539	2.54	.012
Supervisor	153	3.5686	.646		
Handle telephone duties					
Secretary	168	3.9286	.258	1.69	.093
Supervisor	153	3.8627	.415		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Make travel arrangements					
Secretary	164	2.0610	1.084	.24	.812
Supervisor	151	2.0331	.996		
Meet the public					
Secretary	166	3.8373	.458	1.80	.073
Supervisor	154	3.7208	.672		
Organize and prioritize work					
Secretary	166	3.7711	.568	1.31	.192
Supervisor	152	3.6842	.614		
Organize and use a filing system					
Secretary	166	3.8373	.402	1.82	.070
Supervisor	153	3.7451	.494		
Proofread and edit					
Secretary	166	3.4639	.945	.07	.941
Supervisor	149	3.4564	.858		
Requisition and maintain office supplies					
Secretary	166	3.5241	.728	1.24	.215
Supervisor	154	3.4221	.739		
Research information					
Secretary	162	2.6728	.951	.14	.890
Supervisor	152	2.6579	.957		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Solve problems, make decisions					
Secretary	165	3.2485	.768	.02	.983
Supervisor	150	3.2467	.768		
Take and transcribe shorthand					
Secretary	163	1.6319	.896	-1.59	.113
Supervisor	151	1.7881	.845		
Use a micrographics filing system					
Secretary	161	1.3727	.781	-1.64	.103
Supervisor	146	1.5205	.798		
Maintain equipment and software					
Secretary	161	2.6708	1.203	1.29	.196
Supervisor	153	2.5033	1.089		
Operate a calculator					
Secretary	165	3.5212	.838	.09	.925
Supervisor	154	3.5130	.725		
Operate a copy machine					
Secretary	166	3.5301	.865	-.80	.422
Supervisor	155	3.6000	.689		
Operate a word processor					
Secretary	160	2.5313	1.303	-.55	.580
Supervisor	152	2.6118	1.266		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Operate an electric typewriter					
Secretary	167	3.2695	1.095	-2.02	.044
Supervisor	155	3.4903	.856		
Operate an electronic typewriter					
Secretary	160	2.6312	1.344	-1.45	.148
Supervisor	149	2.8456	1.256		
Select office equipment					
Secretary	161	2.7702	1.131	1.55	.122
Supervisor	151	2.55828	1.002		
Transcribe documents from machine dication					
Secretary	163	2.1227	1.285	-.22	.827
Supervisor	150	2.1533	1.197		
Type with speed					
Secretary	163	3.1043	.940	-.08	.936
Supervisor	151	3.1126	.898		
Type with accuracy					
Secretary	165	3.7576	.691	-.17	.864
Supervisor	152	3.7697	.569		
Use database software					
Secretary	162	2.2099	1.283	.44	.657
Supervisor	149	2.1477	1.188		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Use electronic calendaring					
Secretary	160	1.4937	.883	-2.17	.031
Supervisor	147	1.7279	.997		
Use electronic mail					
Secretary	160	1.5500	.944	-1.17	.241
Supervisor	149	1.6779	.968		
Use financial applications					
Secretary	159	1.8365	1.158	-1.66	.098
Supervisor	150	2.0533	1.140		
Use graphics software					
Secretary	158	1.6329	.960	-.69	.492
Supervisor	147	1.7075	.931		
Use spreadsheet software					
Secretary	159	1.8868	1.153	-.82	.415
Supervisor	147	1.9932	1.126		
Use voice mail					
Secretary	156	1.3846	.846	-.24	.812
Supervisor	145	1.4069	.777		
Use word processing					
Secretary	161	2.2360	1.339	-.76	.448
Supervisor	148	2.3514	1.329		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Other computer applications					
Secretary	94	1.2660	.691	-2.21	.029
Supervisor	75	1.5600	.976		
Accounting/bookkeeping					
Secretary	165	3.4485	.940	1.52	.129
Supervisor	152	3.2895	.918		
Business English					
Secretary	166	3.7530	.587	-.32	.750
Supervisor	154	3.7727	.518		
Business management					
Secretary	164	3.1585	.946	1.51	.131
Supervisor	154	3.0000	.922		
Business mathematics					
Secretary	165	3.2970	.899	-.31	.757
Supervisor	150	3.3267	.807		
English and communications					
Secretary	164	3.7927	.525	1.67	.095
Supervisor	151	3.6821	.636		
Math					
Secretary	165	3.5576	.701	.89	.372
Supervisor	151	3.4901	.642		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Science					
Secretary	162	2.3580	.995	-.98	.329
Supervisor	150	2.4667	.967		
Humanities					
Secretary	162	2.9136	1.018	.82	.416
Supervisor	151	2.8212	.987		
Social science					
Secretary	162	2.6049	1.024	-.25	.799
Supervisor	150	2.6333	.944		
Physical education					
Secretary	164	2.1768	1.050	-1.71	.088
Supervisor	151	2.3775	1.031		
Legal secretarial procedures					
Secretary	164	2.4390	1.229	1.13	.259
Supervisor	149	2.2886	1.123		
Management of filing systems					
Secretary	164	3.5366	.746	-.38	.705
Supervisor	150	3.5667	.660		
Medical secretarial procedures					
Secretary	161	1.9565	1.221	.99	.321
Supervisor	148	1.8243	1.117		

Table H-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Office management					
Secretary	162	3.4198	.825	2.15	.032
Supervisor	153	3.2092	.908		
Word processing concepts					
Secretary	163	2.7239	1.278	.83	.406
Supervisor	149	2.6040	1.267		

APPENDIX I. COMPARISON OF SECRETARIES AND SUPERVISORS ON IMPORTANCE OF SECRETARIAL RESPONSIBILITIES AND SUBJECTS IN 1997

Table I-1. Data

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Arrange meetings and conferences					
Secretary	152	2.8684	1.021	.89	.376
Supervisor	140	2.7643	.986		
Arrange electronic conferences					
Secretary	153	2.3464	1.166	.50	.618
Supervisor	142	2.2817	1.061		
Compose office correspondence					
Secretary	154	3.5260	.669	-.02	.982
Supervisor	144	3.5278	.719		
Communicate ideas verbally					
Secretary	153	3.6078	.610	-.12	.907
Supervisor	141	3.6170	.724		
Handle administrative responsibilities					
Secretary	154	3.3571	.861	-1.92	.056
Supervisor	144	3.5278	.668		
Handle mailing tasks					
Secretary	157	3.8854	.375	.64	.0521
Supervisor	144	3.8542	.458		
Handle telephone duties					
Secretary	155	3.6000	.670	1.05	.293
Supervisor	144	3.5139	.738		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Make travel arrangements					
Secretary	151	2.3046	1.143	.36	.716
Supervisor	140	2.2571	1.082		
Meet the public					
Secretary	155	3.8323	.481	1.32	.189
Supervisor	142	3.7465	.624		
Organize and prioritize work					
Secretary	156	3.7115	.643	-.52	.606
Supervisor	142	3.7465	.525		
Organize and use a filing system					
Secretary	155	3.6581	.649	-.18	.856
Supervisor	143	3.6713	.614		
Proofread and edit					
Secretary	155	3.3677	.933	-.82	.414
Supervisor	142	3.4507	.813		
Requisition and maintain office supplies					
Secretary	155	3.4258	.781	.70	.485
Supervisor	144	3.3611	.816		
Research information					
Secretary	153	2.9150	.924	.20	.845
Supervisor	141	2.8936	.954		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Solve problems, make decisions					
Secretary	150	3.2933	.799	.03	.977
Supervisor	141	3.2908	.722		
Take and transcribe shorthand					
Secretary	148	1.7230	.925	-1.38	.168
Supervisor	144	1.8750	.953		
Use a micrographics filing system					
Secretary	148	2.3514	1.239	-.18	.857
Supervisor	138	2.3768	1.141		
Maintain equipment and software					
Secretary	151	3.2318	1.061	.22	.829
Supervisor	141	3.2057	1.004		
Operate a calculator					
Secretary	149	3.4161	.871	.32	.752
Supervisor	143	33.846	.830		
Operate a copy machine					
Secretary	155	3.5097	.784	-.44	.658
Supervisor	144	3.5486	.737		
Operate a word processor					
Secretary	152	3.4605	.962	.03	.976
Supervisor	140	3.4572	.977		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Operate an electric typewriter					
Secretary	155	3.2000	1.009	-.55	.580
Supervisor	144	3.2639	.982		
Operate an electronic typewriter					
Secretary	149	3.2215	1.071	-.77	.441
Supervisor	140	3.3143	.975		
Select office equipment					
Secretary	152	2.9145	1.104	.48	.632
Supervisor	138	2.85518	1.008		
Transcribe documents from machine dictation					
Secretary	148	2.4189	1.229	-1.04	.298
Supervisor	142	2.5704	1.246		
Type with speed					
Secretary	147	3.1361	.896	-1.39	.166
Supervisor	141	3.2766	.566		
Type with accuracy					
Secretary	149	3.6980	.685	-.63	.526
Supervisor	141	3.7447	.566		
Use database software					
Secretary	153	3.2849	1.108	-.68	.495
Supervisor	139	3.3309	.958		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Use electronic calendaring					
Secretary	149	2.7785	1.213	-1.74	.083
Supervisor	139	3.0072	1.011		
Use electronic mail					
Secretary	150	2.8933	1.216	-.80	.425
Supervisor	142	3.0000	1.065		
Use financial applications					
Secretary	151	3.0000	1.200	-.65	.519
Supervisor	143	3.0839	1.024		
Use graphics software					
Secretary	147	2.8299	1.224	-.10	.919
Supervisor	141	2.8440	1.129		
Use spreadsheet software					
Secretary	151	2.9603	1.210	-.94	.347
Supervisor	141	3.0851	1.052		
Use voice mail					
Secretary	147	2.6054	1.247	-.44	.656
Supervisor	136	2.6691	1.155		
Use word processing					
Secretary	153	3.2810	1.091	-1.21	.223
Supervisor	141	3.4255	.935		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Other computer applications					
Secretary	81	2.5062	1.315	-1.84	.067
Supervisor	73	2.8767	1.178		
Accounting/bookkeeping					
Secretary	152	3.4605	.860	.80	.426
Supervisor	142	3.3803	.865		
Business English					
Secretary	154	3.6948	.630	-.17	.867
Supervisor	143	3.7063	.555		
Business management					
Secretary	153	3.2745	.868	.74	.462
Supervisor	144	3.2014	.841		
Business mathematics					
Secretary	153	3.3399	.836	-.65	.514
Supervisor	140	3.4000	.737		
English and communications					
Secretary	152	3.8092	.524	1.10	.270
Supervisor	141	3.7376	.581		
Math					
Secretary	151	3.5364	.719	-.46	.649
Supervisor	140	3.5714	.589		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Science					
Secretary	148	2.4459	1.012	-.84	.399
Supervisor	139	2.5468	1.009		
Humanities					
Secretary	149	2.8993	1.038	.11	.910
Supervisor	140	2.8857	1.004		
Social science					
Secretary	149	2.6174	1.056	-.85	.394
Supervisor	139	2.7194	.971		
Physical education					
Secretary	152	2.2434	1.122	-1.66	.099
Supervisor	140	2.4571	1.082		
Legal secretarial procedures					
Secretary	149	2.6913	1.230	.92	.359
Supervisor	140	2.5643	1.120		
Management of filing systems					
Secretary	154	3.4740	.785	-1.28	.202
Supervisor	141	3.5816	.656		
Medical secretarial procedures					
Secretary	150	2.0600	1.265	1.28	.202
Supervisor	139	1.8777	1.158		

Table I-1. (continued)

Job title	Number	Mean	S. D.	T-value	2-tailed probability
Office management					
Secretary	154	3.4935	.810	.38	.702
Supervisor	144	3.4583	.774		
Word processing concepts					
Secretary	150	3.3867	1.022	-1.29	.199
Supervisor	140	3.5286	.852		

APPENDIX J. COMPARISON OF IMPORTANCE OF SECRETARIAL RESPONSIBILITIES AND SUBJECTS IN 1987 AND 1997

Table J-1. Data

Year	Number	Mean	S. D.	T-value	2-tailed probability
Arrange meetings and conferences					
1987	321	2.6262	1.088	- 4.65	0.000
1997	321	2.7695	1.029		
Arrange electronic conferences					
1987	317	1.6498	.846	-11.67	0.000
1997	317	2.2618	1.116		
Compose office correspondence					
1987	327	3.4465	.765	-2.06	.041
1997	327	3.4985	.722		
Communicate ideas verbally					
1987	323	3.6223	.635	.14	.889
1997	323	3.6192	.669		
Handle administrative responsibilities					
1987	328	3.2744	.887	- 5.24	0.000
1997	328	3.4177	.805		
Handle mailing tasks					
1987	330	3.6667	.597	4.13	0.000
1997	330	3.5727	.695		
Handle telephone duties					
1987	331	3.8610	.453	1.83	.068
1997	331	3.8308	.500		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Make travel arrangements					
1987	319	2.0909	1.059	- 6.12	0.000
1997	319	2.2915	1.116		
Meet the public					
1987	326	3.7699	.592	-.40	.686
1997	326	3.7791	.577		
Organize and prioritize work					
1987	327	3.7248	.589	-.74	.457
1997	327	3.7401	.562		
Organize and use a filing system					
1987	328	3.7652	.504	3.97	0.000
1997	328	3.6555	.668		
Proofread and edit					
1987	325	3.4431	.917	1.53	.127
1997	325	3.3938	.888		
Requisition and maintain office supplies					
1987	328	3.4451	.772	2.13	.034
1997	328	3.3902	.809		
Research information					
1987	323	2.6873	.951	- 6.26	0.000
1997	323	2.9102	.950		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Solve problems, make decisions					
1987	320	3.2656	.756	-1.41	.159
1997	320	3.3062	.759		
Take and transcribe shorthand					
1987	320	1.7000	.877	-2.23	.027
1997	320	1.7875	.956		
Use a micrographics filing system					
1987	310	1.4387	.777	-14.63	0.000
1997	310	2.3226	1.177		
Maintain equipment and software					
1987	321	2.6075	1.146	-10.71	0.000
1997	321	3.1900	1.039		
Operate a calculator					
1987	322	3.5404	.761	4.23	0.000
1997	322	3.4161	.847		
Operate a copy machine					
1987	329	3.5653	.783	.95	.341
1997	329	3.5350	.757		
Operate a word processor					
1987	321	2.5826	1.287	-13.50	0.000
1997	321	3.4455	.980		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Operate an electric typewriter					
1987	329	3.3739	.983	2.68	0.008
1997	329	3.2371	.990		
Operate an electronic typewriter					
1987	318	2.7138	1.314	- 8.13	0.000
1997	318	3.2453	1.040		
Select office equipment					
1987	314	2.6433	1.081	- 6.73	0.000
1997	314	2.8567	1.058		
Transcribe documents from machine dictation					
1987	317	2.1451	1.257	- 6.03	0.000
1997	317	2.4763	1.247		
Type with speed					
1987	315	3.0762	.917	- 3.44	0.001
1997	315	3.1968	.855		
Type with accuracy					
1987	319	3.7680	.616	1.65	.099
1997	319	3.7241	.629		
Use database software					
1987	316	2.2120	1.243	-16.45	0.000
1997	316	3.2690	1.054		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Use electronic calendaring					
1987	307	1.5993	.946	-18.72	0.000
1997	307	2.8274	1.149		
Use electronic mail					
1987	312	1.5801	.928	-19.50	0.000
1997	312	2.8654	1.168		
Use financial applications					
1987	313	1.9329	1.146	-16.27	0.000
1997	313	2.9872	1.138		
Use graphics software					
1987	307	1.6743	.959	-17.25	0.000
1997	307	2.7687	1.192		
Use spreadsheet software					
1987	313	1.9521	1.141	-15.57	0.000
1997	313	2.9585	1.166		
Use voice mail					
1987	301	1.3953	.816	-16.97	0.000
1997	301	2.5482	1.212		
Use word processing					
1987	317	2.3028	1.330	-14.88	0.000
1997	317	3.3123	1.037		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Other computer applications					
1987	156	1.4615	.897	-11.73	0.000
1997	156	2.5962	1.264		
Accounting/bookkeeping					
1987	323	3.3808	.926	-1.53	.127
1997	323	3.4241	.876		
Business English					
1987	326	3.7577	.554	2.42	.016
1997	326	3.7025	.582		
Business management					
1987	324	3.0525	.938	-4.91	0.000
1997	324	3.2130	.877		
Business mathematics					
1987	321	3.3053	.873	-1.91	.058
1997	321	3.3614	.806		
English and communications					
1987	322	3.7267	.601	-2.21	.028
1997	322	3.7671	.562		
Math					
1987	320	3.5094	.676	-1.43	.152
1997	320	3.5437	.661		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Science					
1987	315	2.3841	.978	-4.55	0.000
1997	315	2.5048	1.011		
Humanities					
1987	318	2.8459	1.010	-2.03	.043
1997	318	2.8931	1.012		
Social science					
1987	315	2.5810	.982	-3.05	0.002
1997	315	2.6603	1.007		
Physical education					
1987	320	2.2281	1.021	-4.74	0.000
1997	320	2.3438	1.092		
Legal secretarial procedures					
1987	314	2.3662	1.162	-6.10	0.0000
1997	314	2.6019	1.1779		
Management of filing systems					
1987	323	3.5480	.709	1.10	.270
1997	323	3.5170	.732		
Medical secretarial procedures					
1987	312	1.9038	1.180	-3.43	0.001
1997	312	1.9840	1.223		

Table J-1. (continued)

Year	Number	Mean	S. D.	T-value	2-tailed probability
Office management					
1987	321	3.3053	.884	-5.56	0.000
1997	321	3.4579	.813		
Word processing concepts					
1987	317	2.6246	1.268	-12.61	0.000
1997	317	3.4259	.960		

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